HCD-FL7D

SERVICE MANUAL

Ver 1.2 2002.12

US Model
Canadian Model
AEP Model
UK Model
E Model

HCD-FL7D is the amplifier, CD player, tape deck and tuner section in DHC-FL7D.

DVD Section	Model Name Using Similar Mechanism	NEW
	DVD Mechanism Type	CDM53N-DVBU14
	Base Unit Name	DVBU14
	Optical Pick-up Name	TDP022W
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	TCM-230AWR41CS

SPECIFICATIONS

AUDIO POWER SPECIFICATION:
(USA model only)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

with 8 ohm loads both channels driven, from 120 Hz – 10 kHz; rates 60 watts per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 milliwatts to rated output.

Continuous RMS power output
Center speaker: 60 watts (16 ohms at 1 kHz, 10% THD)
Rear speaker: 60 + 60 watts (8 ohms at 1 kHz, 10% THD)
Sub woofer: 120 watts (8 ohms at 100 Hz, 10% THD)

Amplifier section

Canadian model:

Continuous RMS power output (reference)
Front speaker: 60 + 60 watts (8 ohms at 1 kHz, 10% THD)
Center speaker: 60 watts (16 ohms at 1 kHz, 10% THD)
Rear speaker: 60 + 60 watts (8 ohms at 1 kHz, 10% THD)
Sub woofer: 120 watts (8 ohms at 100 Hz, 10% THD)
Total harmonic distortion less than 0.07% (8 ohms at 1 kHz, 35 watts)

European model:

DIN power output at stereo mode (rated)
45 + 45 watts (8 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
Front speaker: 60 + 60 watts (8 ohms at 1 kHz, 10% THD)
Center speaker: 60 watts (16 ohms at 1 kHz, 10% THD)
Rear speaker: 60 + 60 watts (8 ohms at 1 kHz, 10% THD)
Sub woofer: 120 watts (8 ohms at 100 Hz, 10% THD)

Music power output (reference)
Front speaker: 120 + 120 watts (8 ohms at 1 kHz, 10% THD)
Center speaker: 120 watts (16 ohms at 1 kHz, 10% THD)
Rear speaker: 120 + 120 watts (8 ohms at 1 kHz, 10% THD)
Sub woofer: 240 watts (8 ohms at 100 Hz, 10% THD)

– Continued on next page –

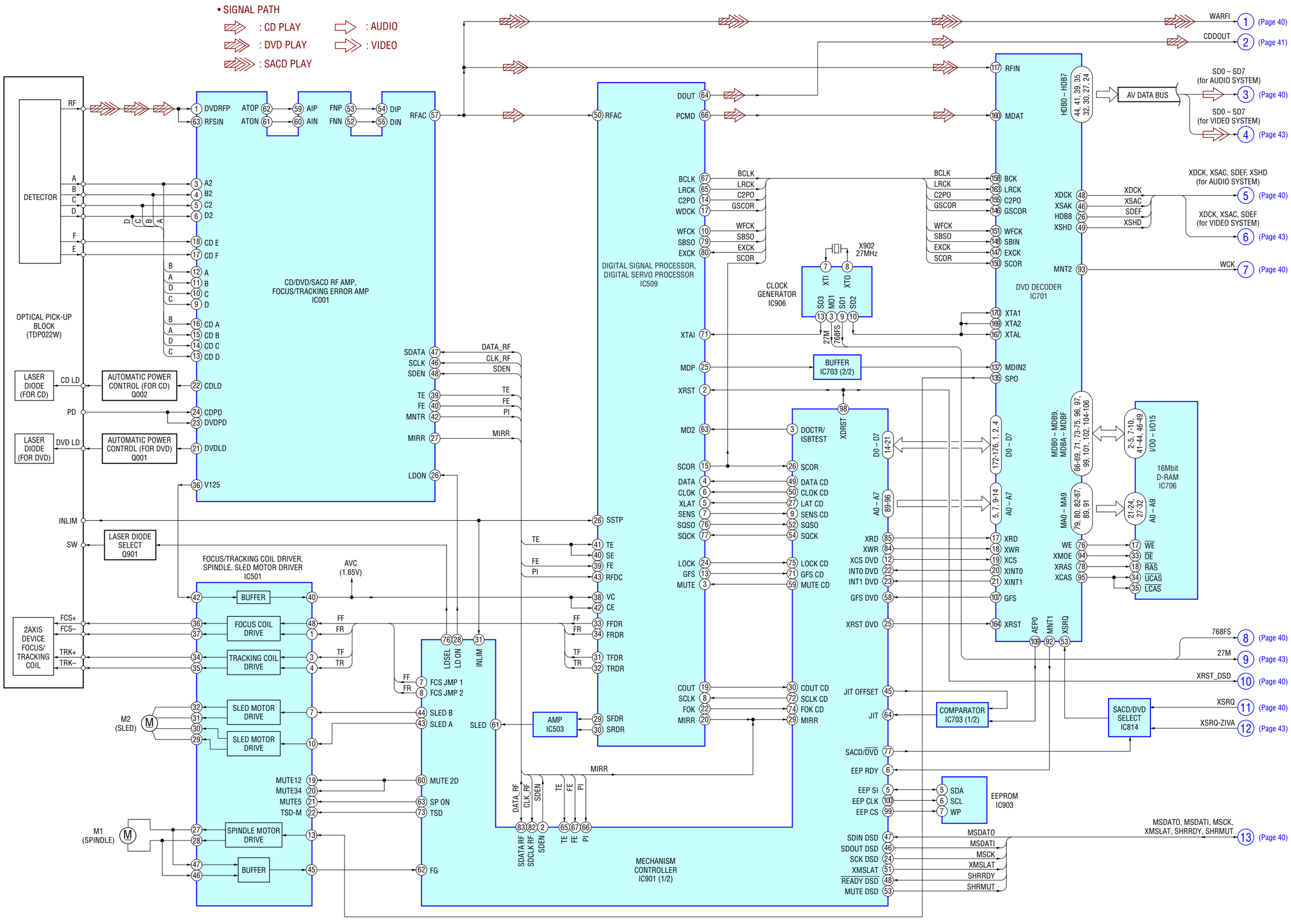
DVD DECK RECEIVER

9-874-113-03
2002L0500-1
© 2002.12
Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

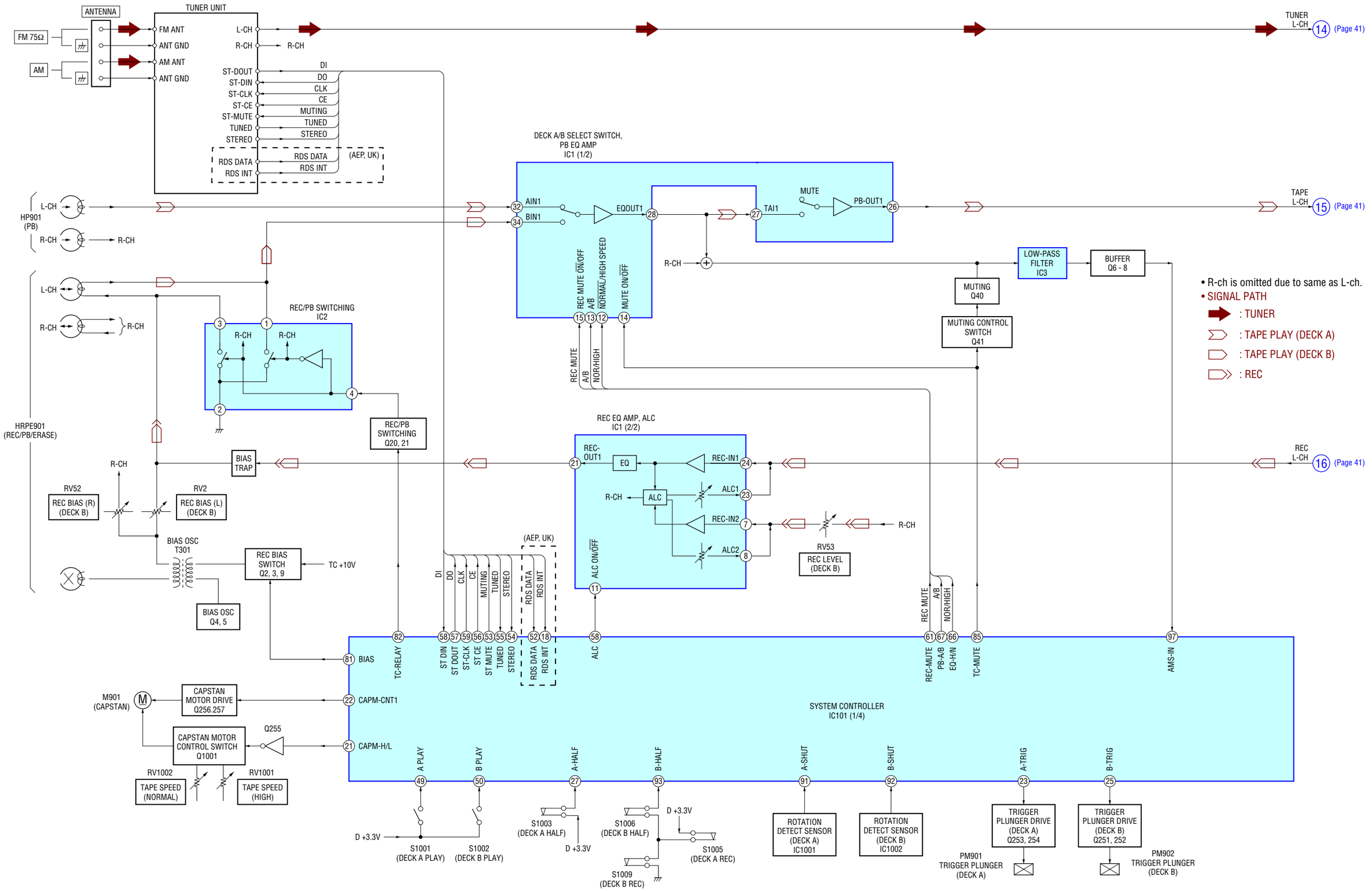
SONY®

SECTION 8
DIAGRAMS

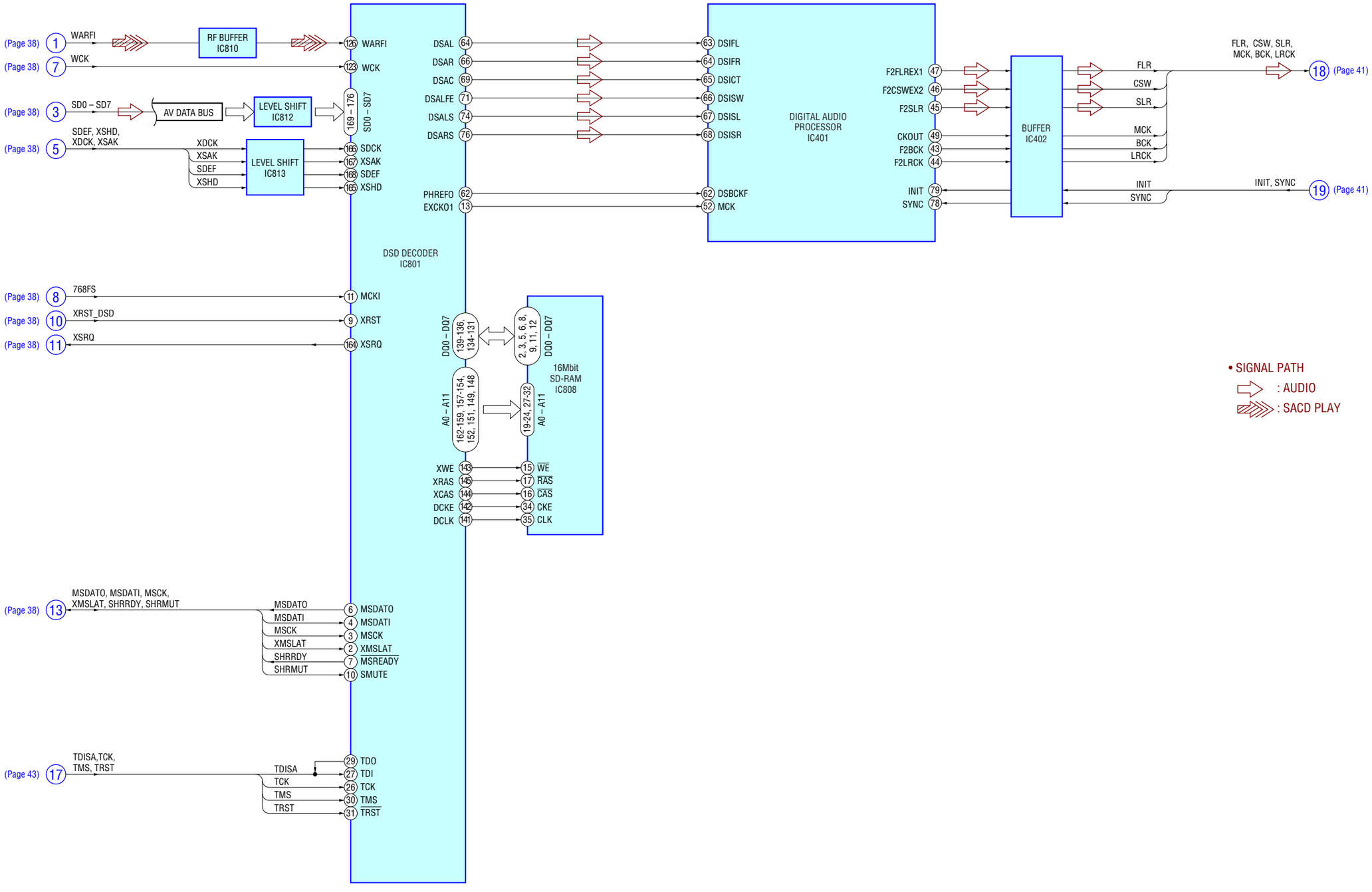
8-1. BLOCK DIAGRAM – RF SERVO Section –



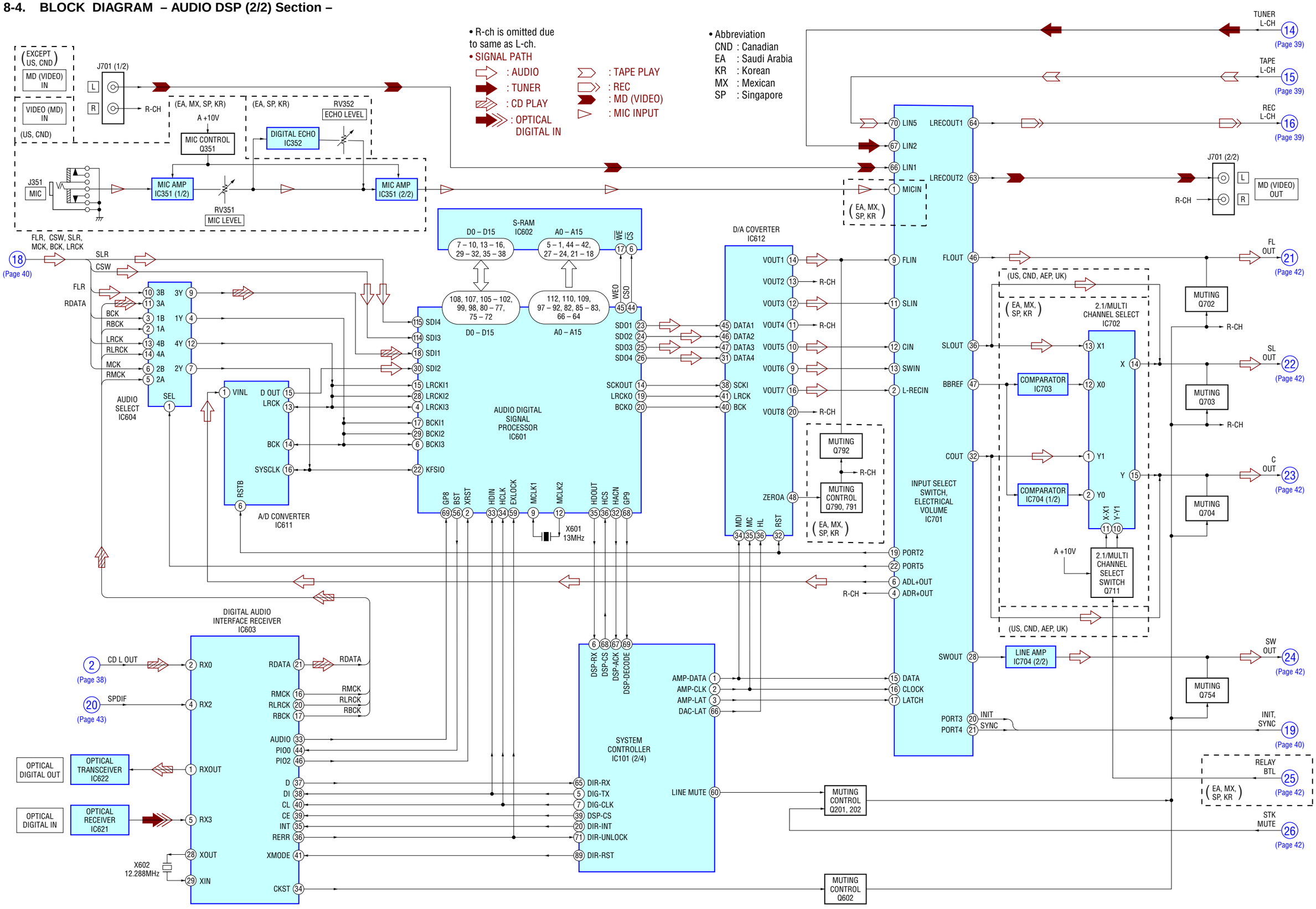
8-2. BLOCK DIAGRAM – TUNER/TAPE DECK Section –



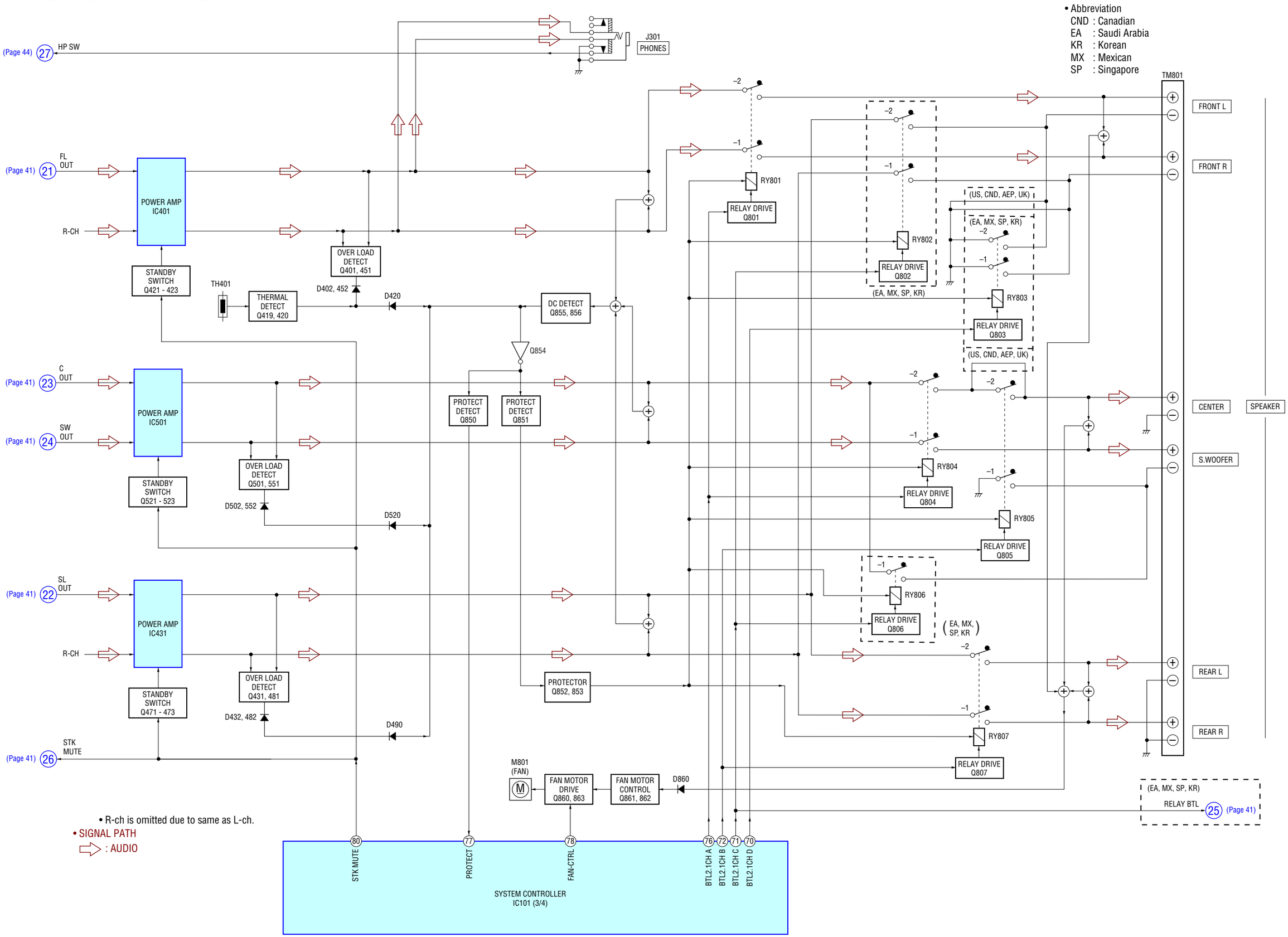
8-3. BLOCK DIAGRAM – AUDIO DSP (1/2) Section –



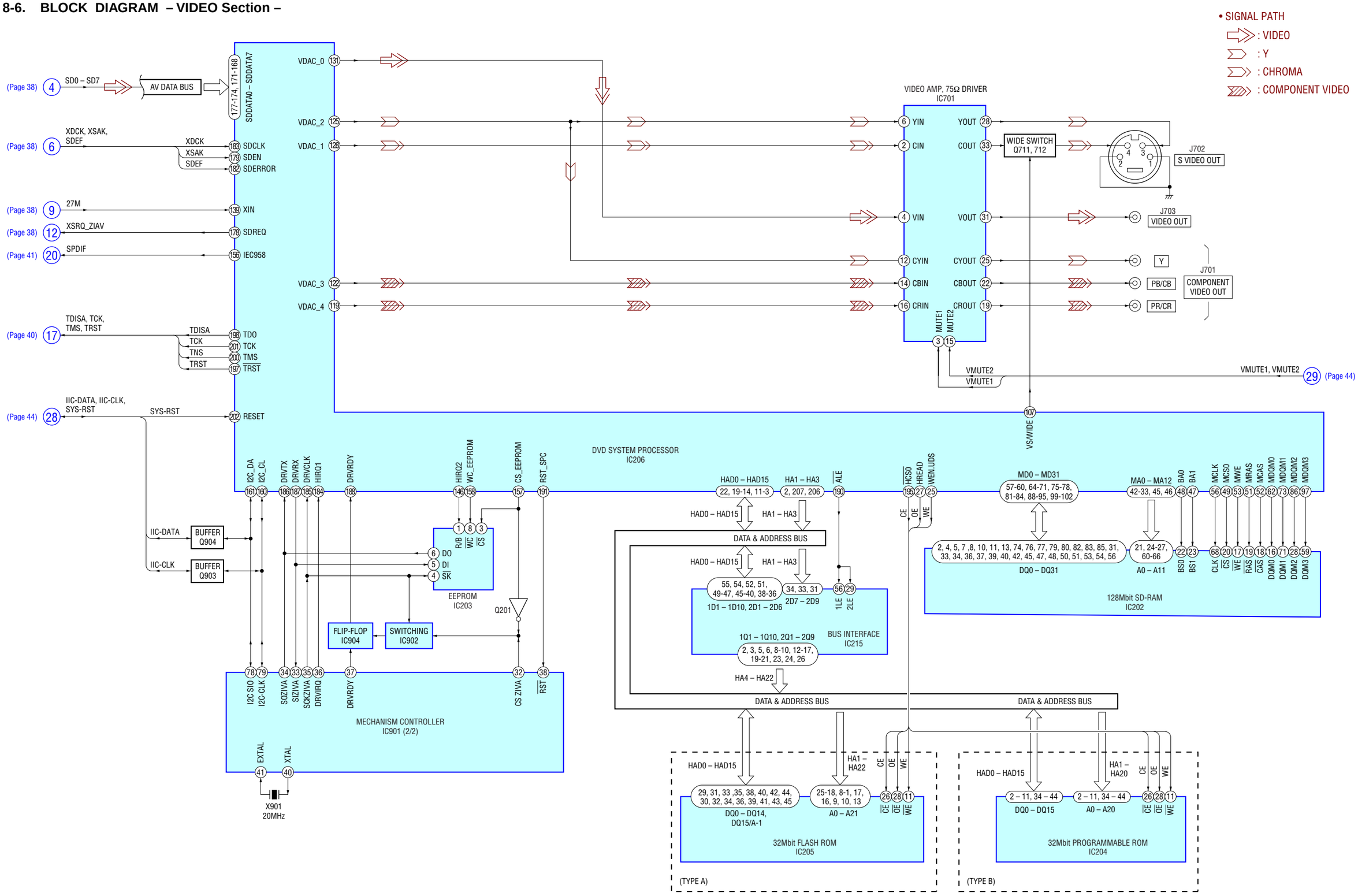
8-4. BLOCK DIAGRAM – AUDIO DSP (2/2) Section –



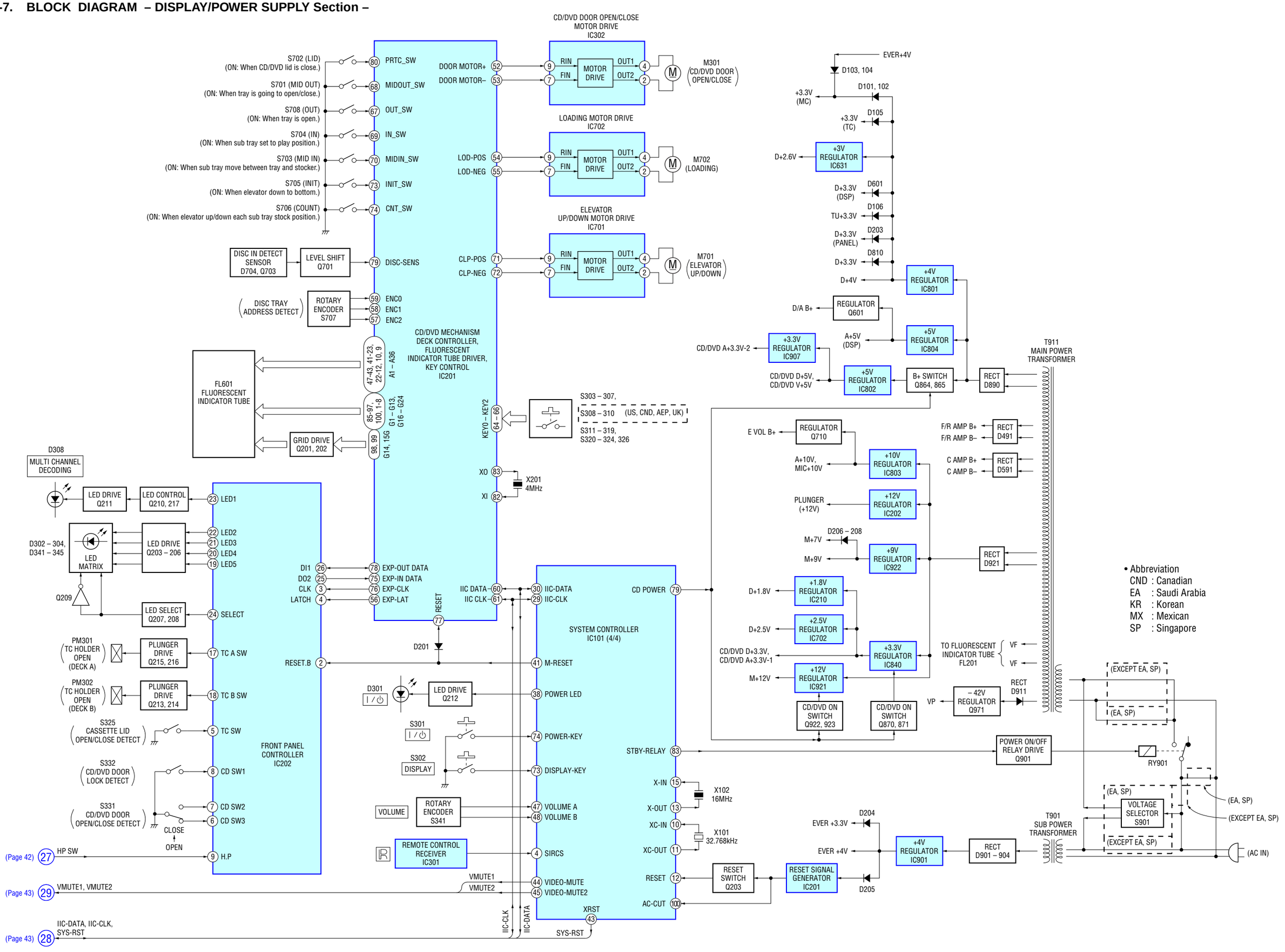
8-5. BLOCK DIAGRAM – POWER AMP Section –



8-6. BLOCK DIAGRAM – VIDEO Section –



8-7. BLOCK DIAGRAM – DISPLAY/POWER SUPPLY Section –



8-8. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

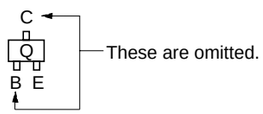
Note on Printed Wiring Boards:

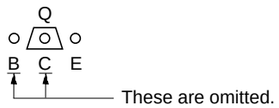
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.

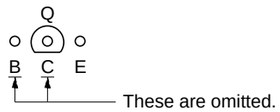
(The other layers' patterns are not indicated.)

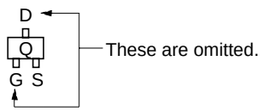
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.









Note on Schematic Diagram:

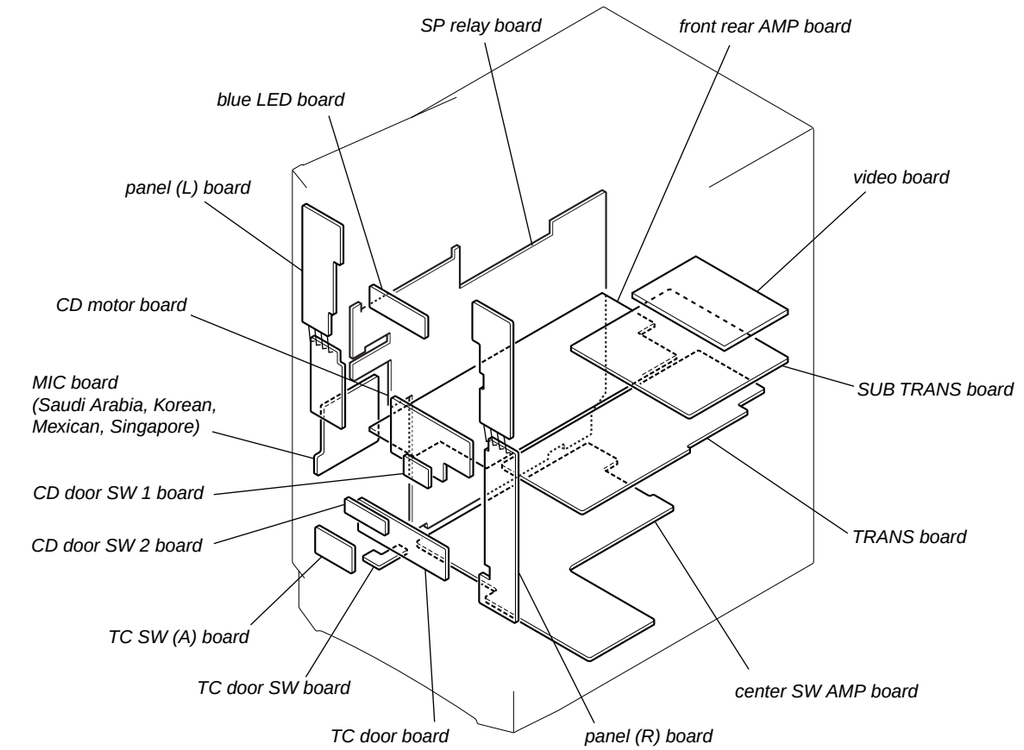
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

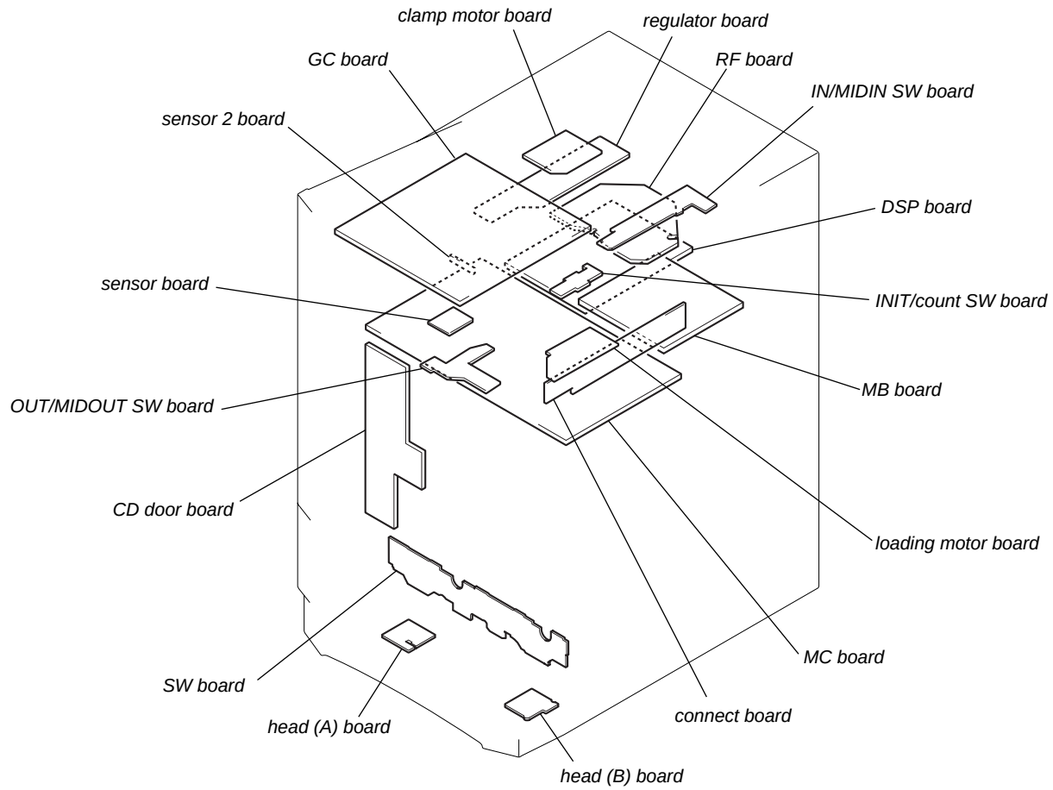
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- : B+ Line.
- : B– Line.
- : adjustment for repair.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : AUDIO
  - : VIDEO
  - : Y
  - : CHROMA
  - : COMPONENT VIDEO
  - : TUNER
  - : TAPE PLAY (DECK A)
  - : TAPE PLAY (DECK B)
  - : REC (DECK B)
  - : CD PLAY
  - : DVD PLAY
  - : SACD PLAY
  - : MIC
  - : MD (VIDEO)
  - : OPTICAL DIGITAL IN
- Abbreviation

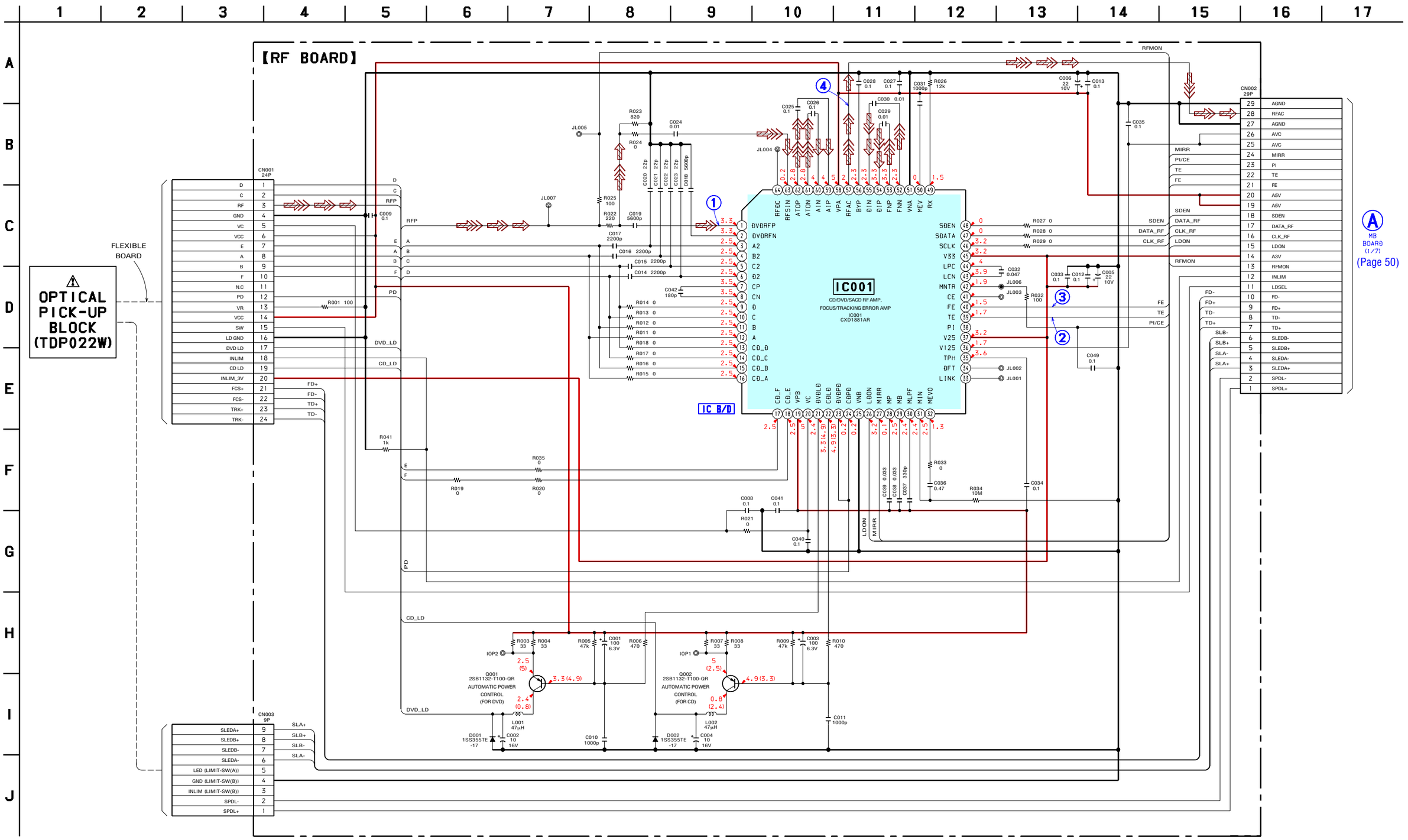
  CND : Canadian model
  EA : Saudi Arabia model
  KR : Korean model
  MX : Mexican model
  SP : Singapore model

- **Circuit Boards Location**





8-10. SCHEMATIC DIAGRAM – RF Board – • See page 57 for Waveforms. • See page 96 for IC Block Diagram.

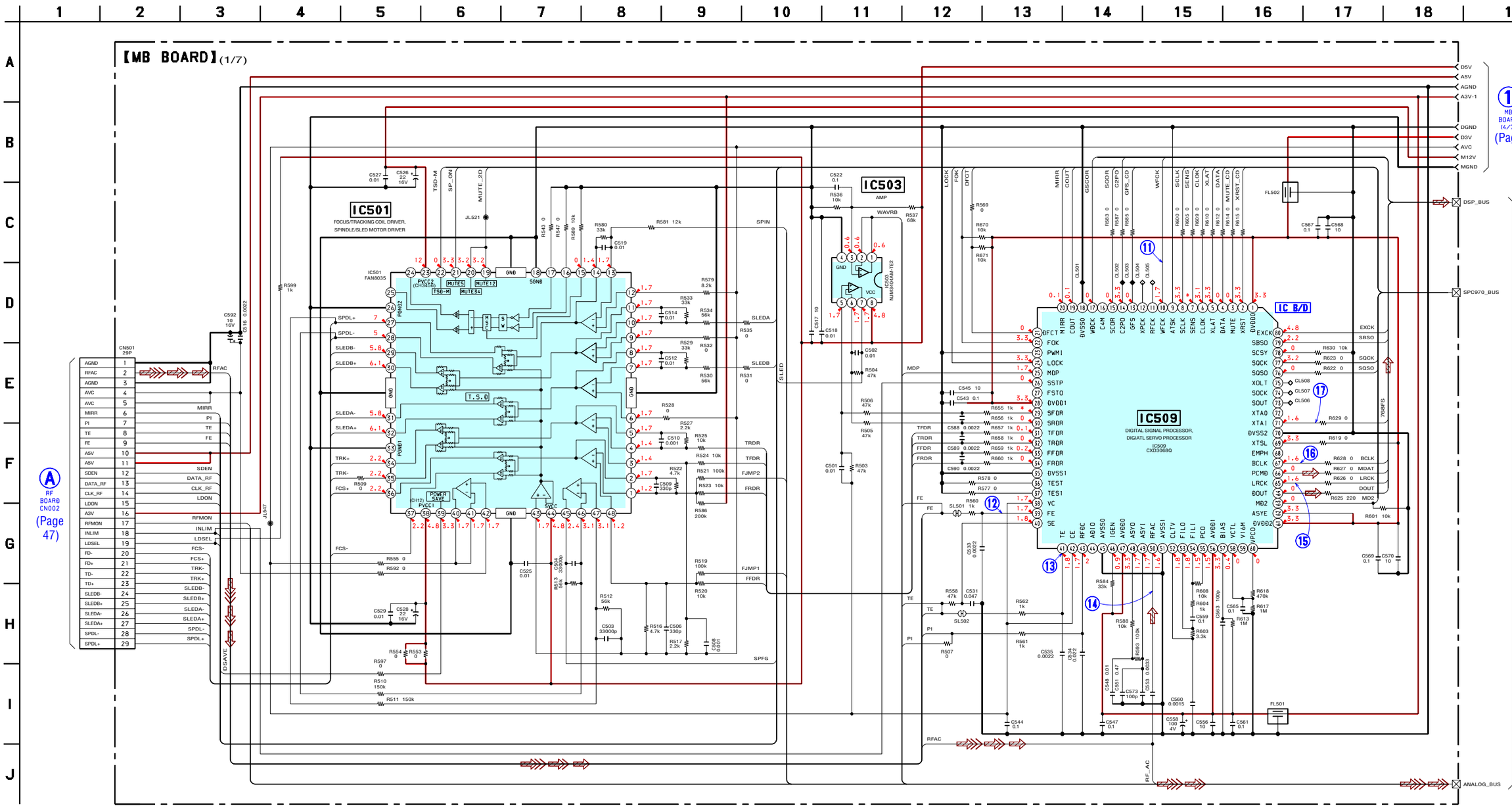


• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : DVD PLAY
( ) : CD PLAY

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

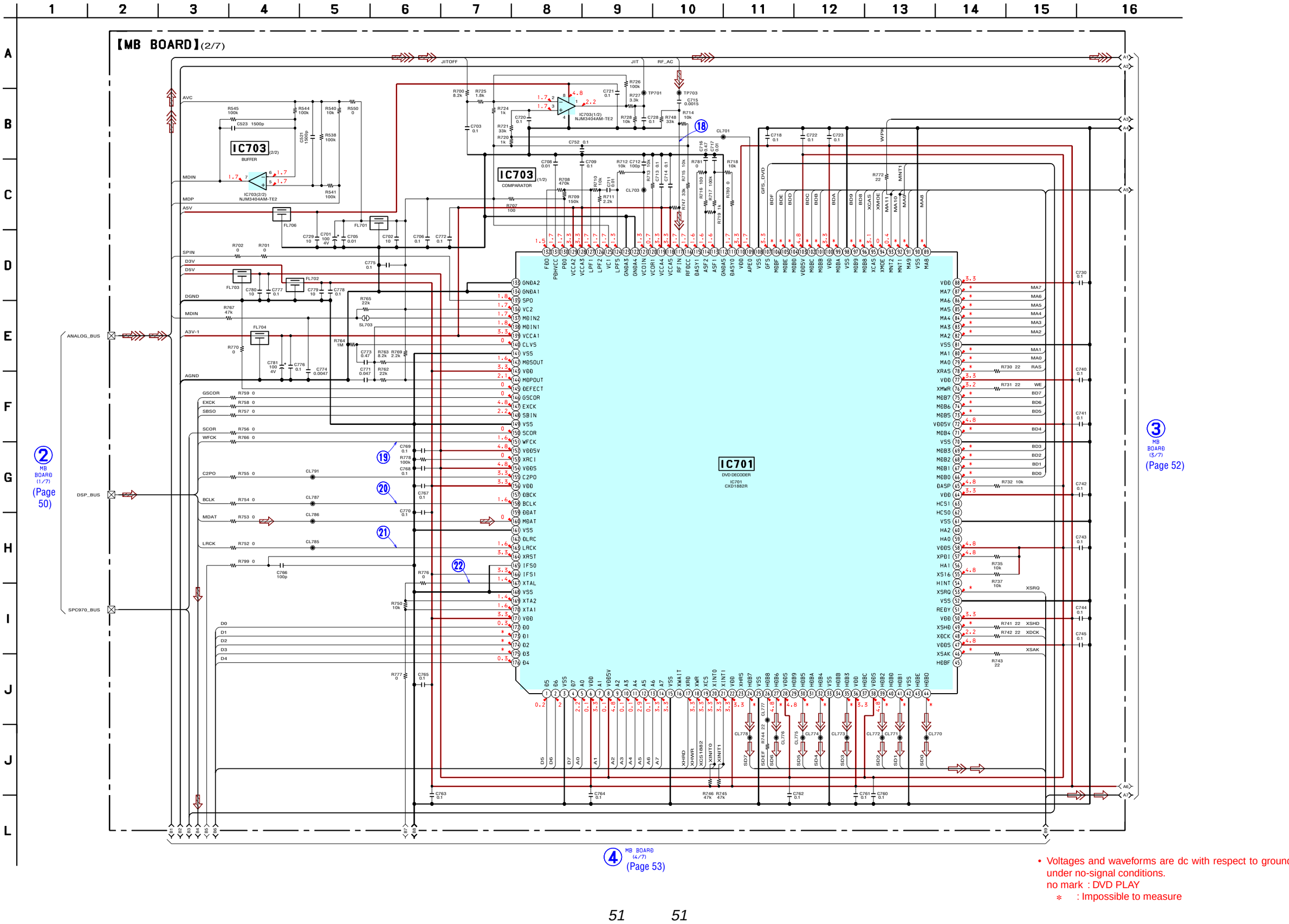
http://getMANUAL.com

8-13. SCHEMATIC DIAGRAM – MB Board (1/7) – • See page 57 for Waveforms. • See page 96 for IC Block Diagram.



- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ✻ : Impossible to measure

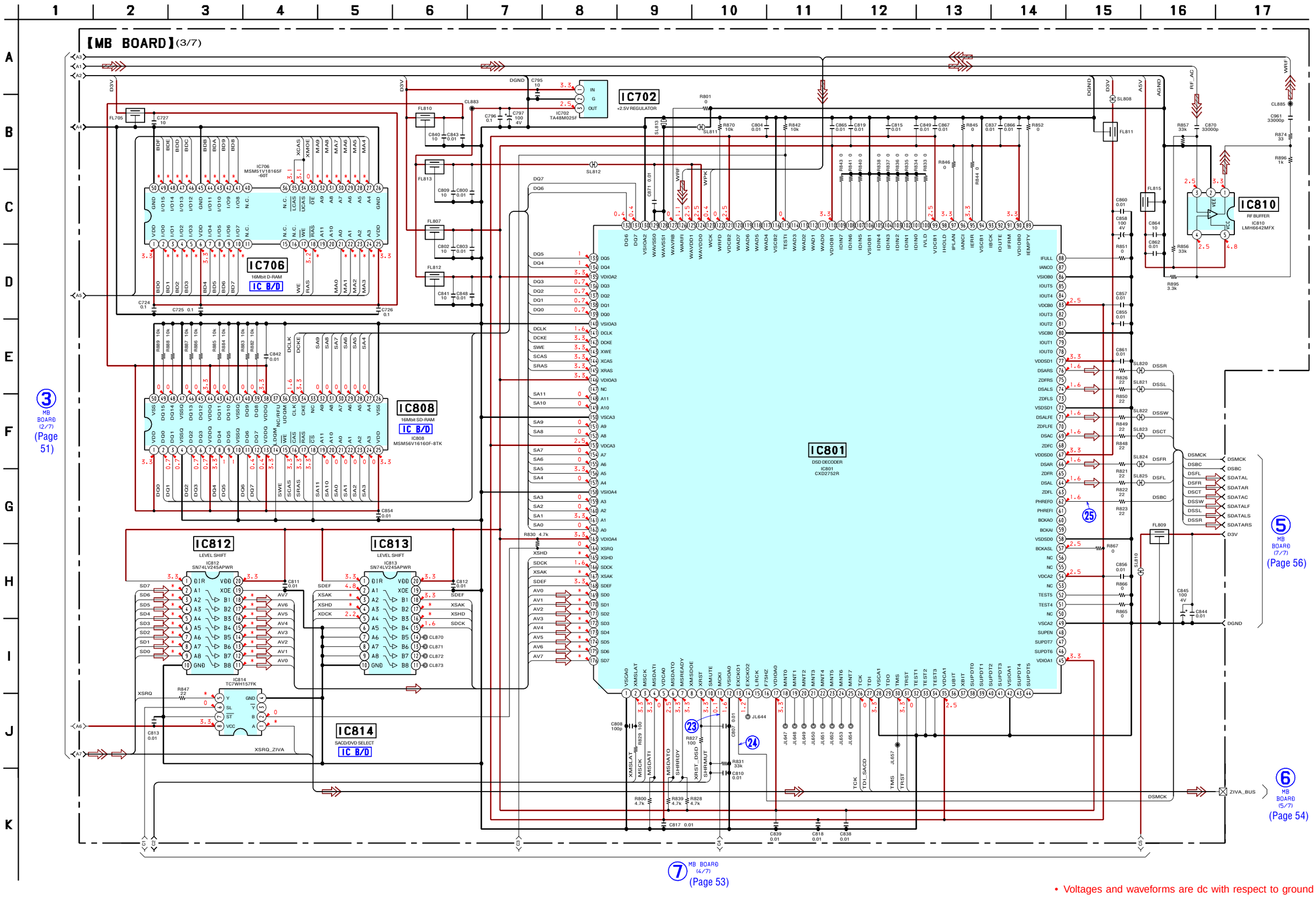
8-14. SCHEMATIC DIAGRAM – MB Board (2/7) – • See page 57 for Waveforms.



• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : DVD PLAY
* : Impossible to measure

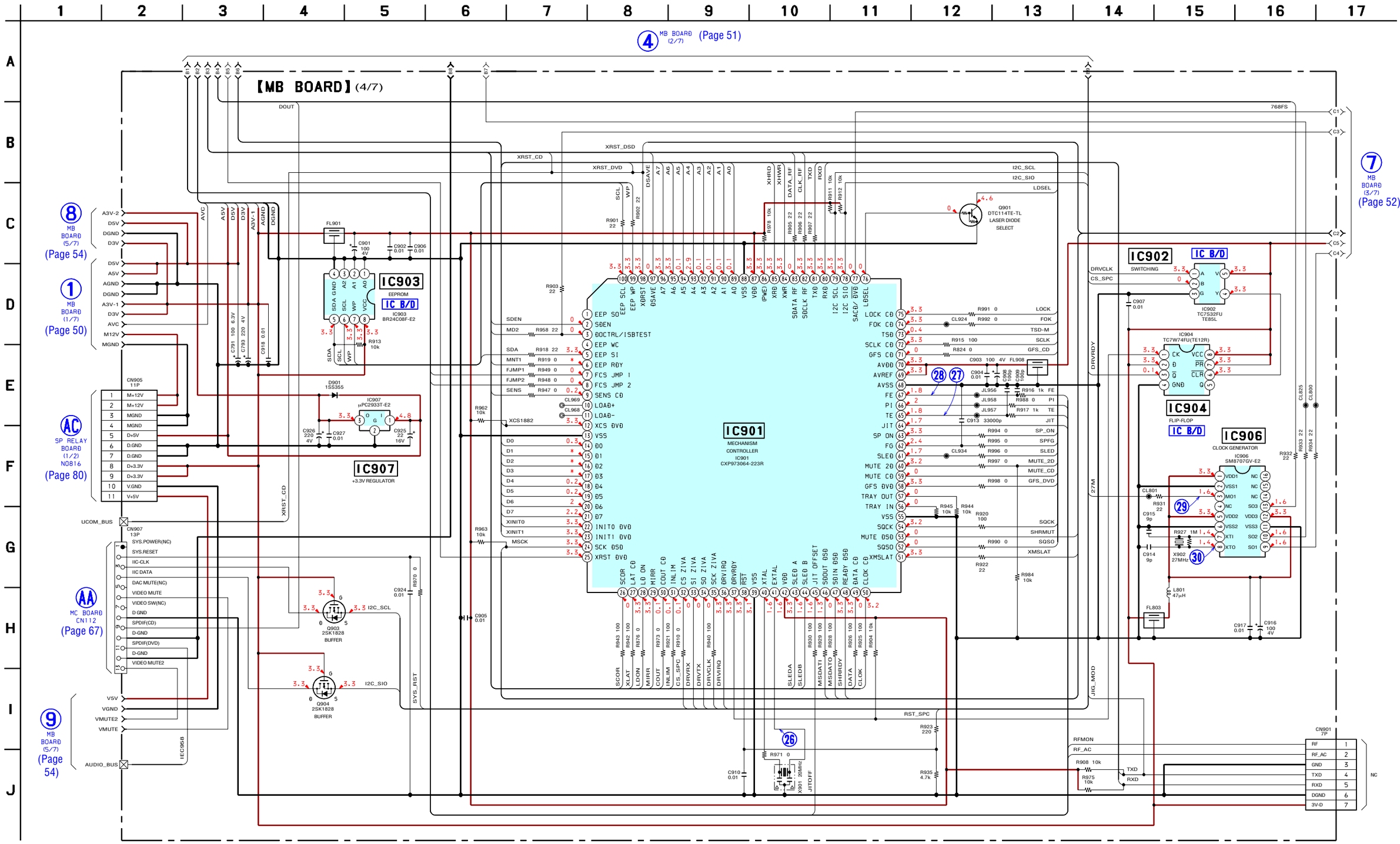
8-15. SCHEMATIC DIAGRAM – MB Board (3/7) –

• See page 57 for Waveforms. • See page 96 for IC Block Diagrams.



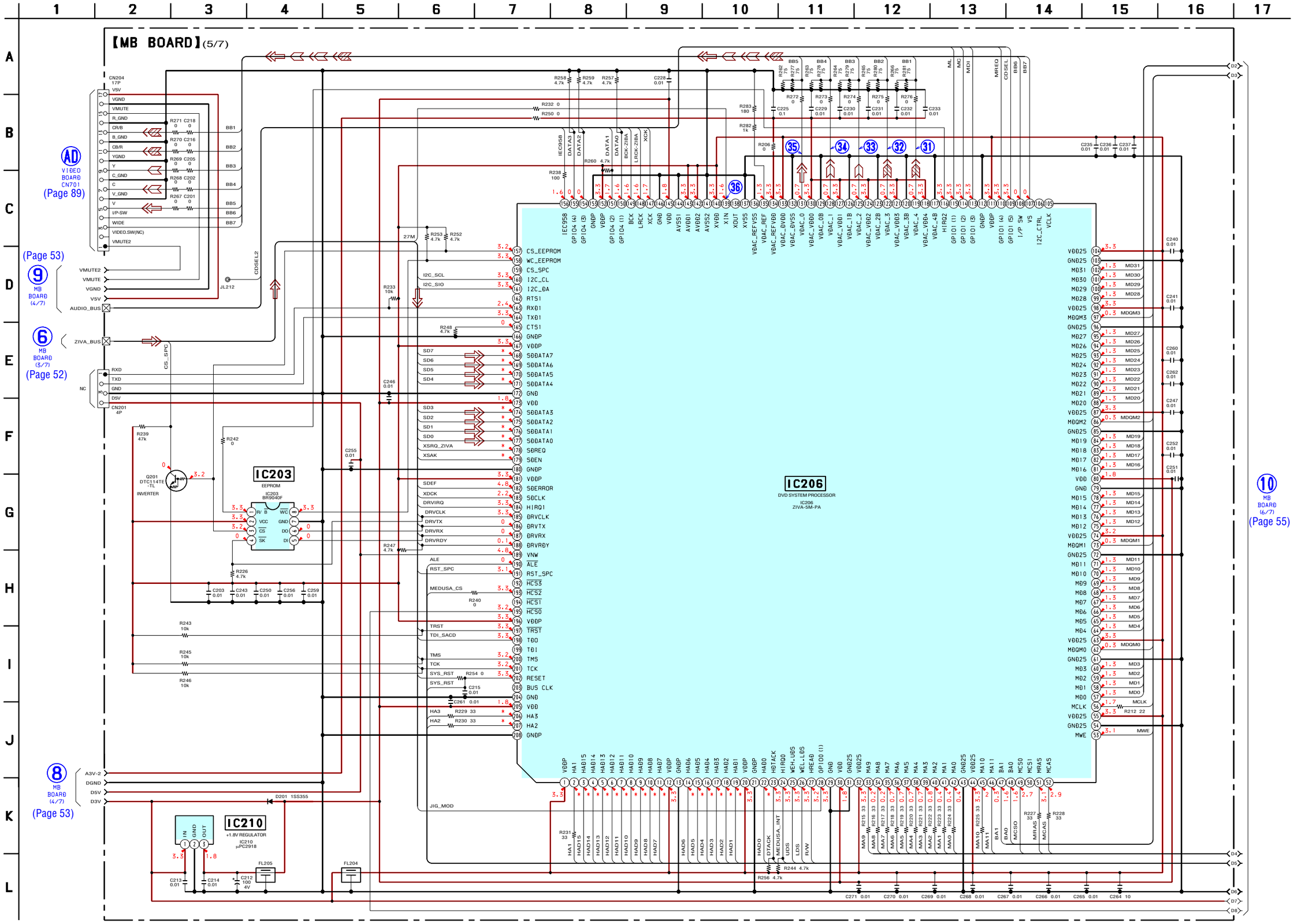
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ✻ : Impossible to measure

8-16. SCHEMATIC DIAGRAM – MB Board (4/7) – • See page 57 for Waveforms. • See page 96 for IC Block Diagrams.



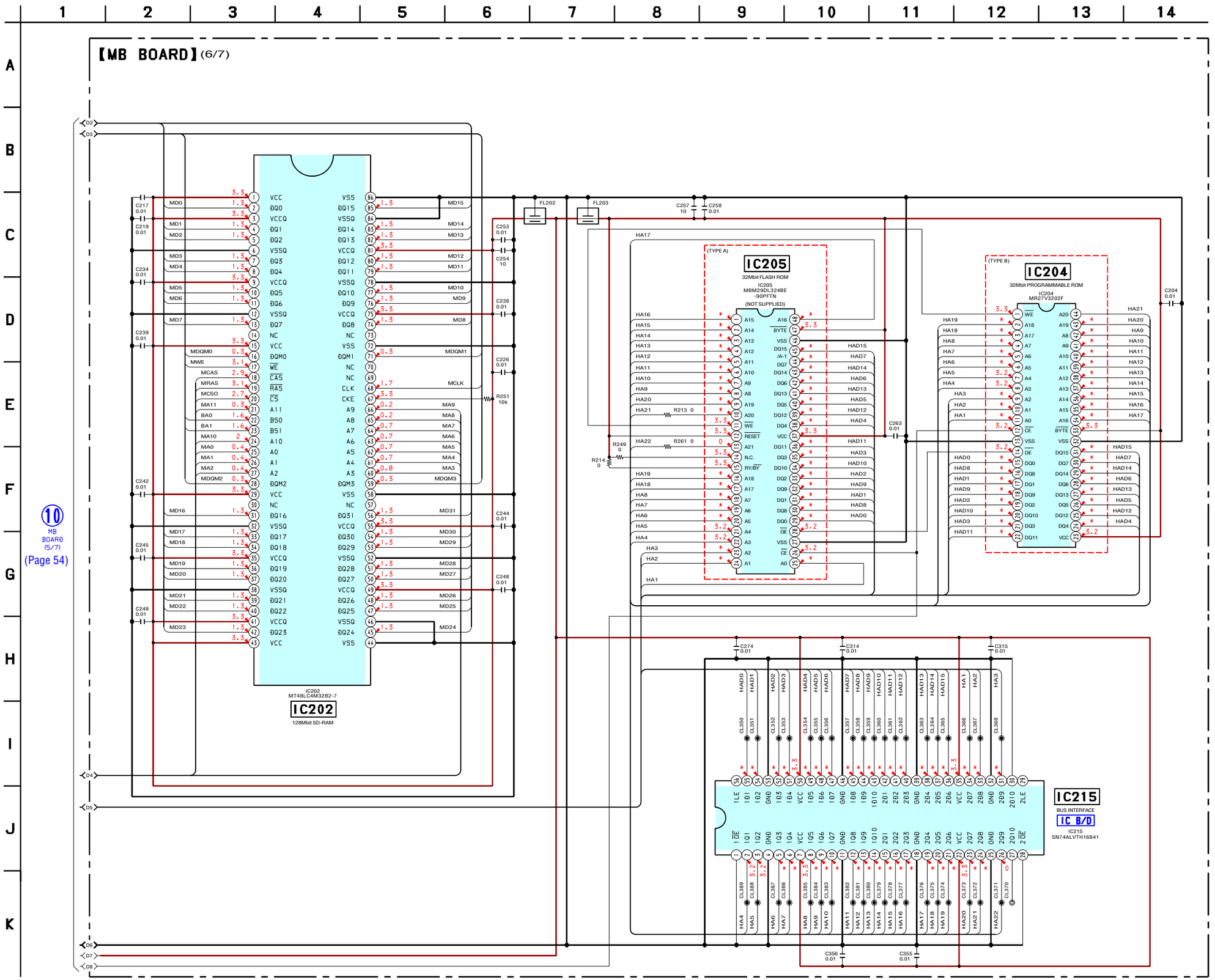
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ✻ : Impossible to measure

8-17. SCHEMATIC DIAGRAM – MB Board (5/7) – • See page 57 for Waveforms.



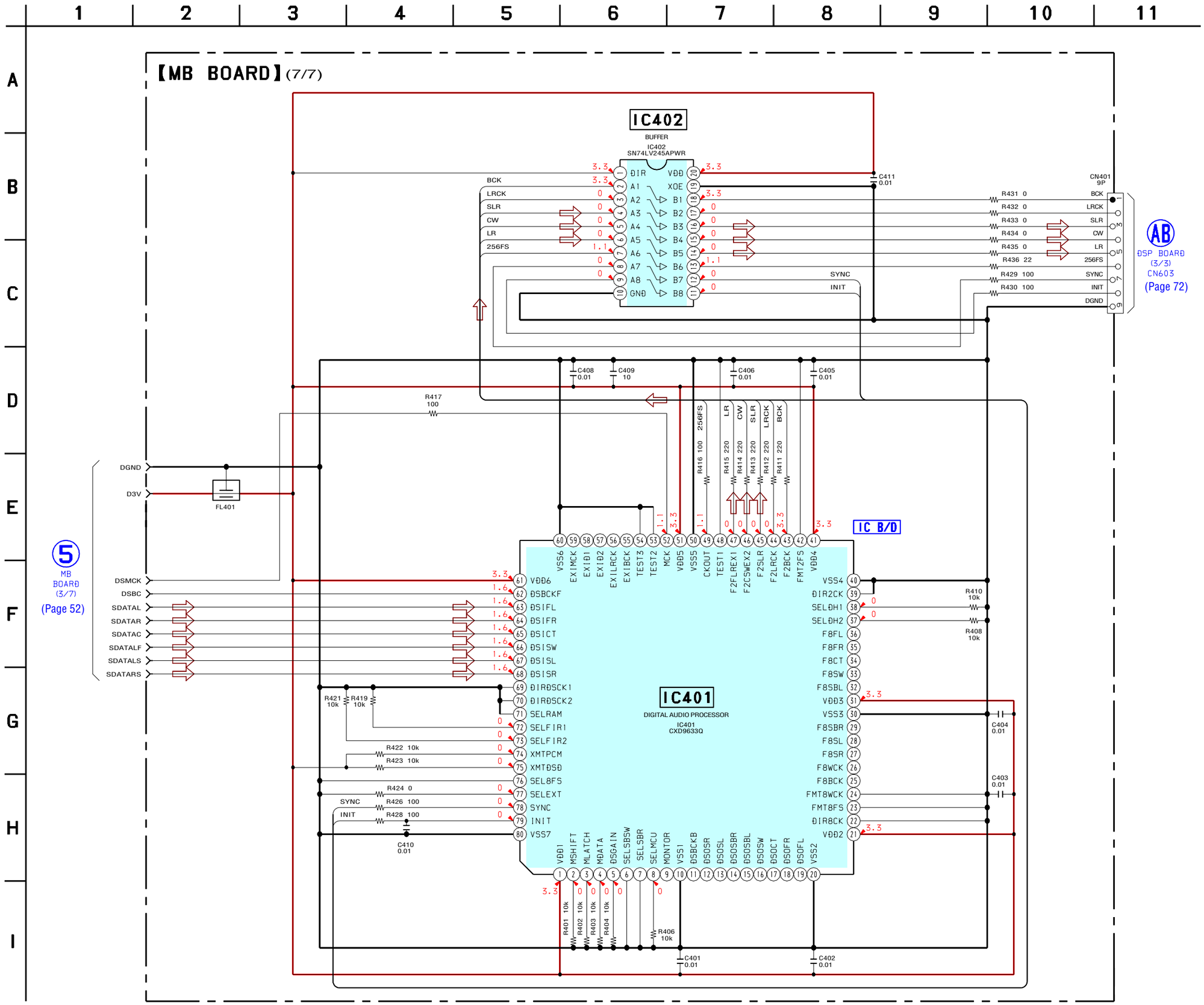
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ∗ : Impossible to measure

8-18. SCHEMATIC DIAGRAM – MB Board (6/7) – Note: When replacing IC205 of type A, install IC204 instead of IC205.



- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  * : Impossible to measure

8-19. SCHEMATIC DIAGRAM – MB Board (7/7) – • See page 96 for IC Block Diagram.

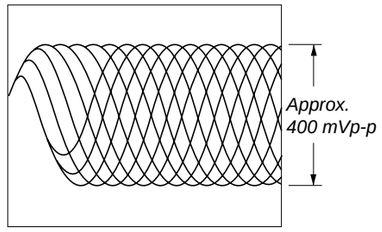


- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : DVD PLAY
  ∗ : Impossible to measure

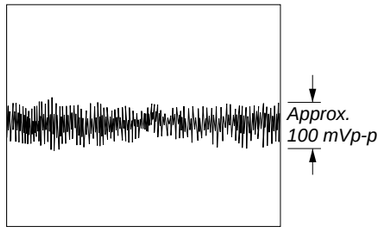
• **Waveforms**

– RF Board –

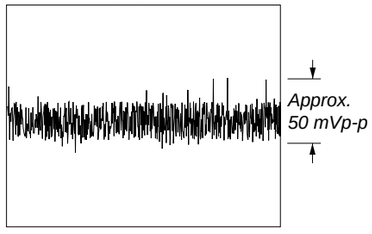
1 IC001 ① (DVDRFP)



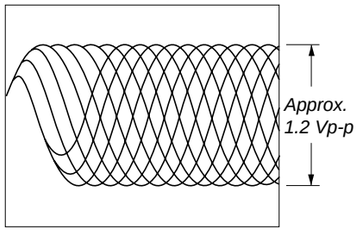
2 IC001 ㊴ (TE)



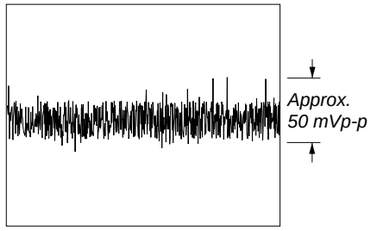
3 IC001 ㊵ (FE)



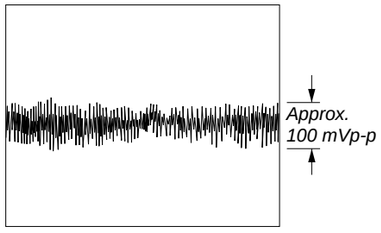
4 IC001 ㊼ (RFAC)



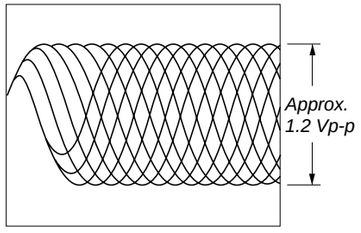
12 IC509 ㊴ (FE)



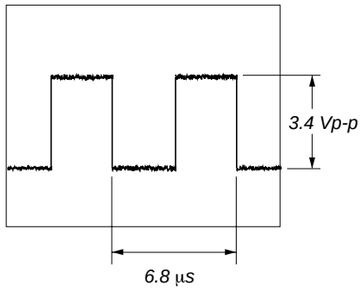
13 IC509 ㊶ (TE)



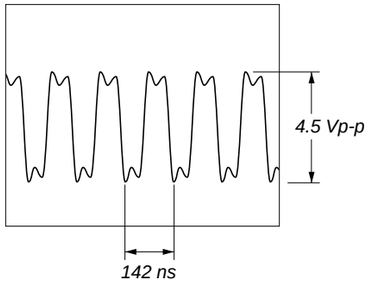
14 IC401 ㊿ (RFAC)



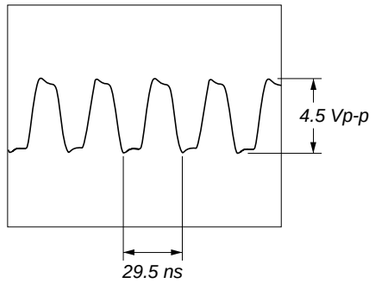
15 IC509 ㊺ (LRCK)



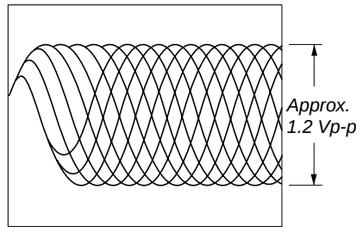
16 IC509 ㊼ (BCK)



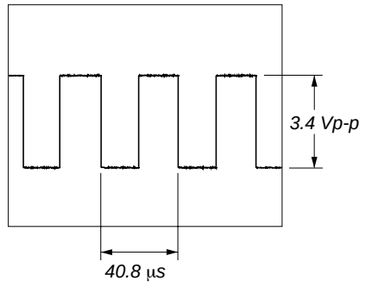
17 IC509 ㊶ (XTAI)



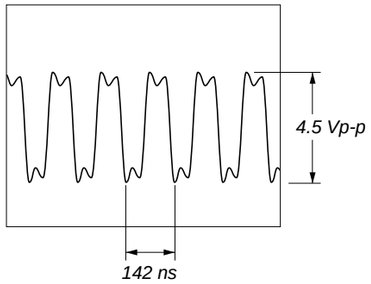
18 IC701 ⑪ (RFIN)



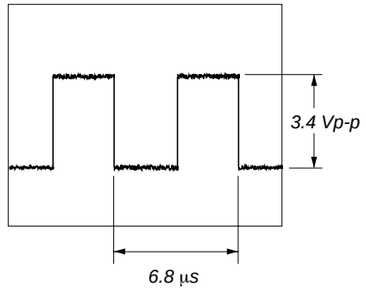
19 IC701 ⑮ (WFCK)



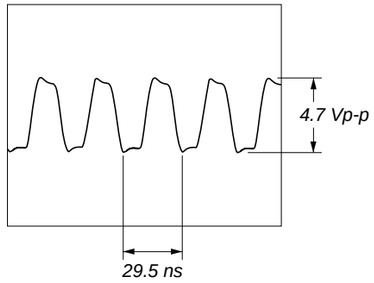
20 IC701 ⑱ (BCLK)



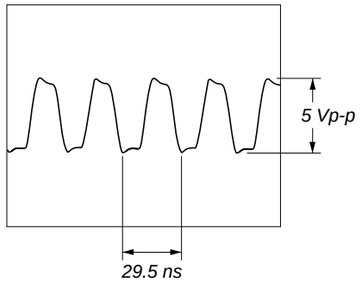
21 IC701 ⑯ (LRCK)



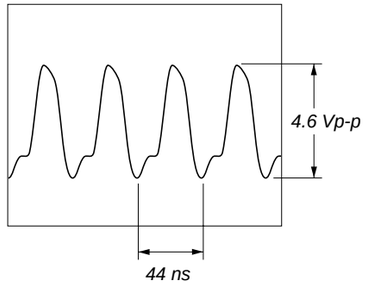
22 IC701 ⑯ (XTAL)



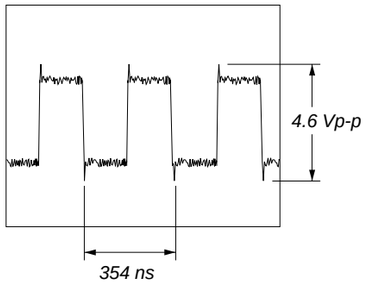
23 IC801 ⑪ (MCKI)



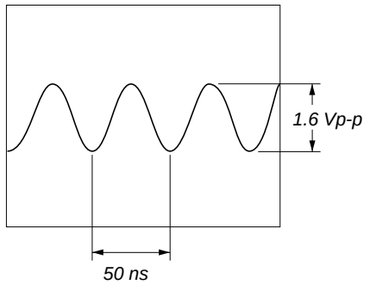
24 IC801 ⑬ (EXCKO1)



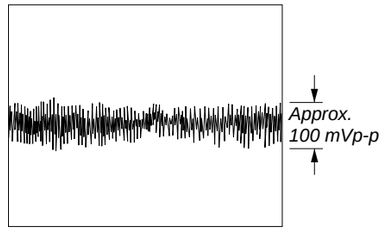
25 IC801 ㊷ (PHREFO)



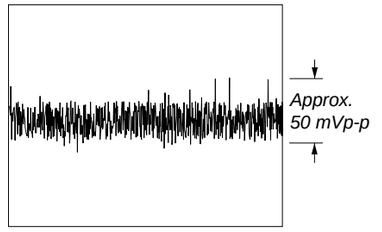
26 IC901 ㊶ (EXTAL)



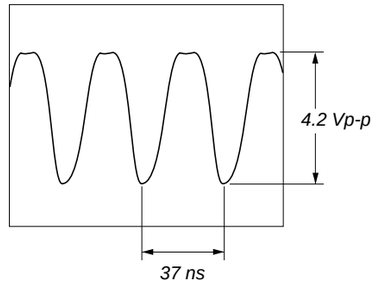
27 IC901 ㊺ (TE)



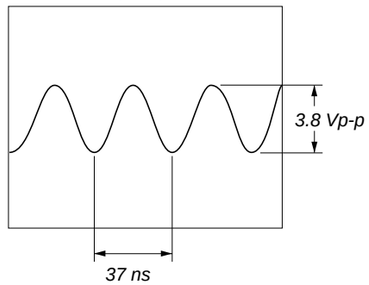
28 IC901 ㊼ (FE)



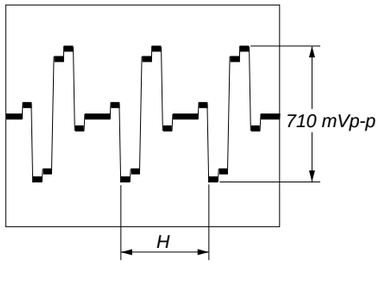
29 IC906 ③ (MO1)



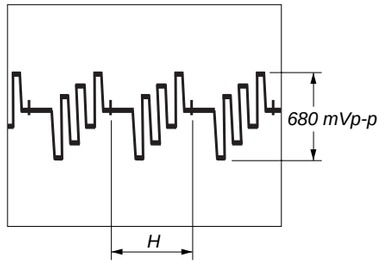
30 IC906 ⑧ (XTO)



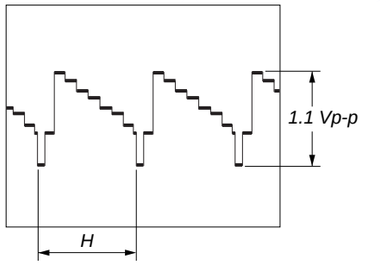
31 IC206 ⑪⑨ (VDAC 4) (NTSC Color Bars Play)



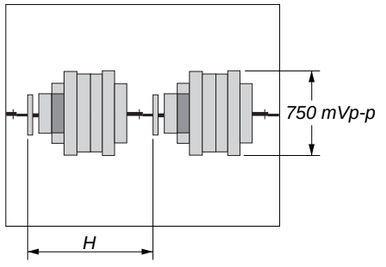
32 IC206 ⑫② (VDAC 3) (NTSC Color Bars Play)



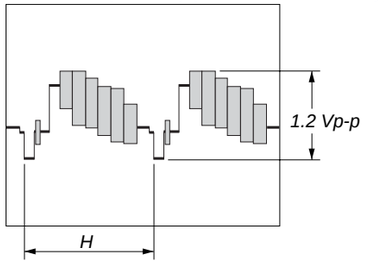
33 IC206 ⑫⑤ (VDAC 2) (NTSC Color Bars Play)



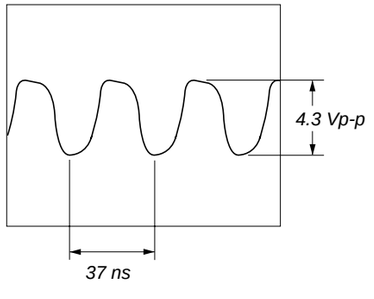
34 IC206 ⑫⑧ (VDAC 1) (NTSC Color Bars Play)



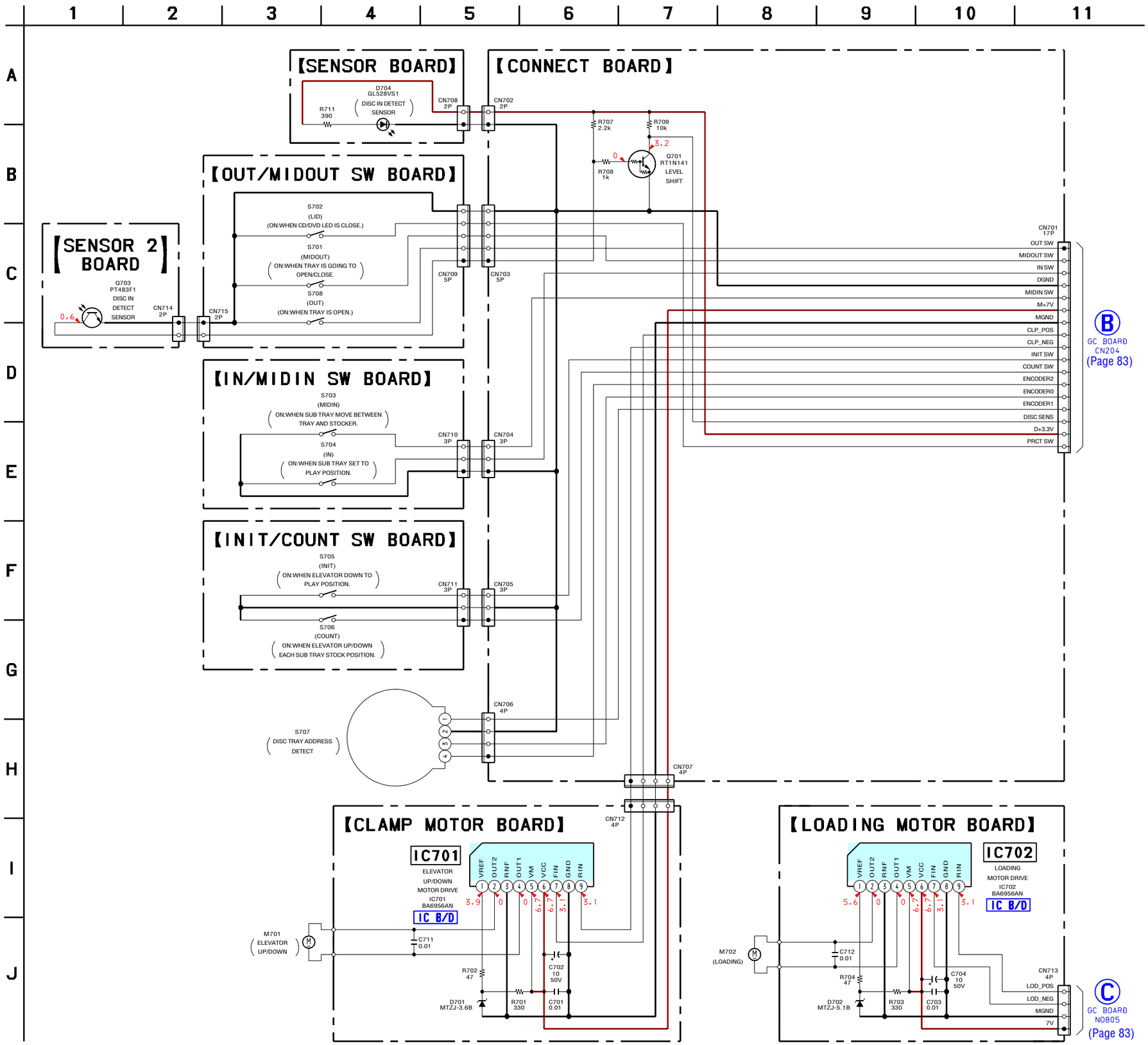
35 IC206 ⑬① (VDAC 0) (NTSC Color Bars Play)



36 IC206 ⑬⑧ (XIN)

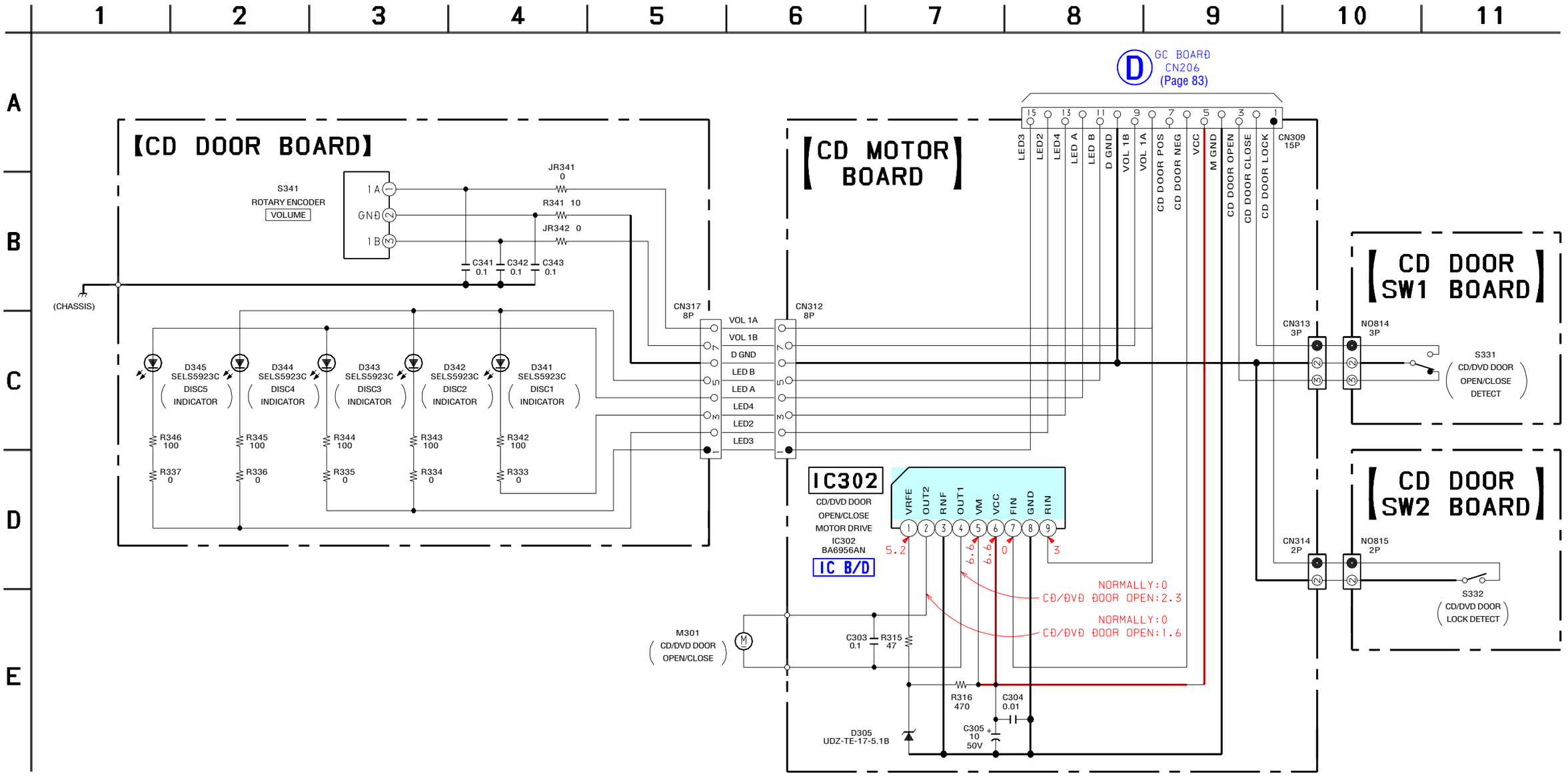


8-21. SCHEMATIC DIAGRAM – CHANGER Section – • See page 96 for IC Block Diagrams.



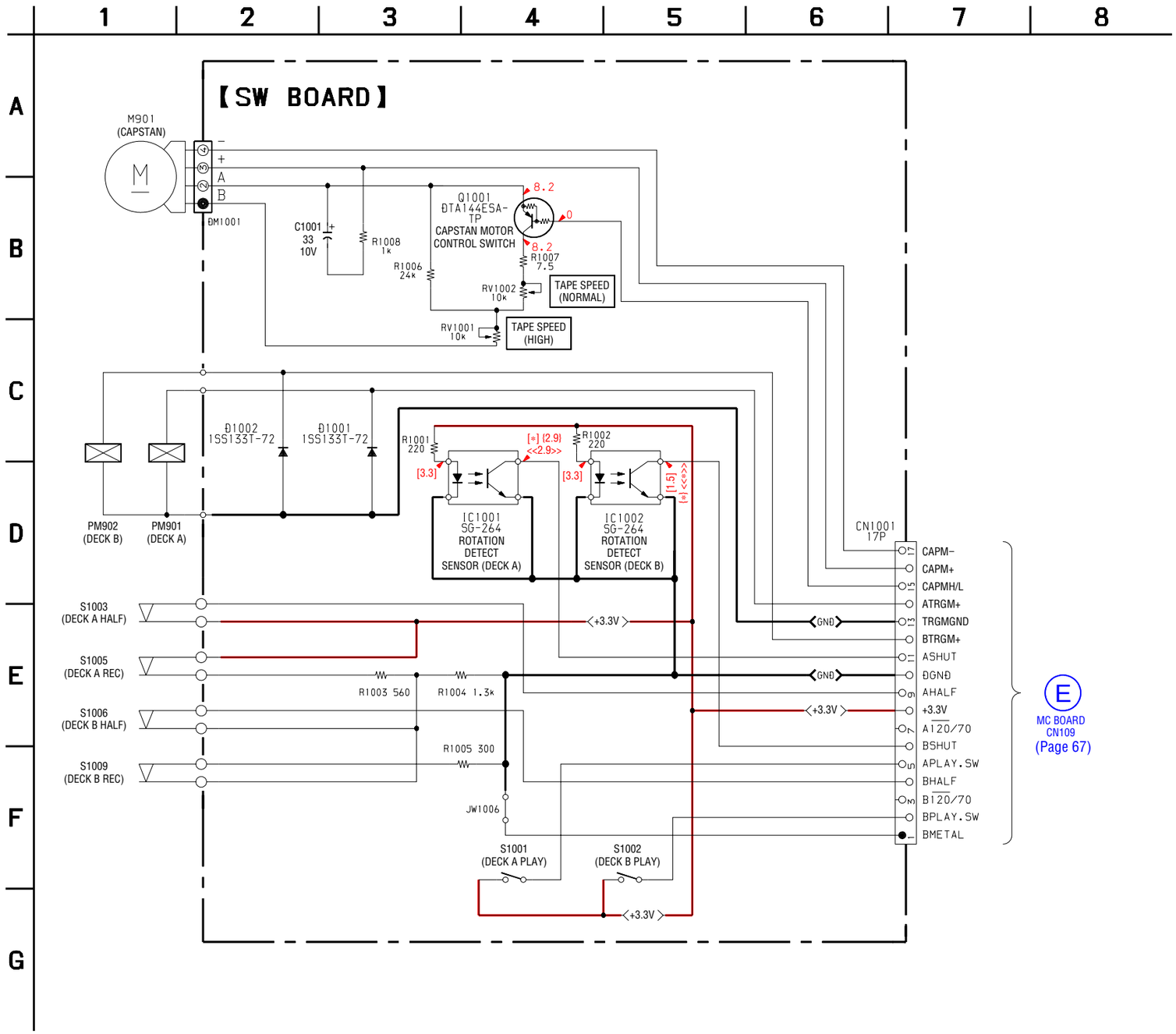
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

8-23. SCHEMATIC DIAGRAM – CD DOOR Section – • See page 96 for IC Block Diagram.



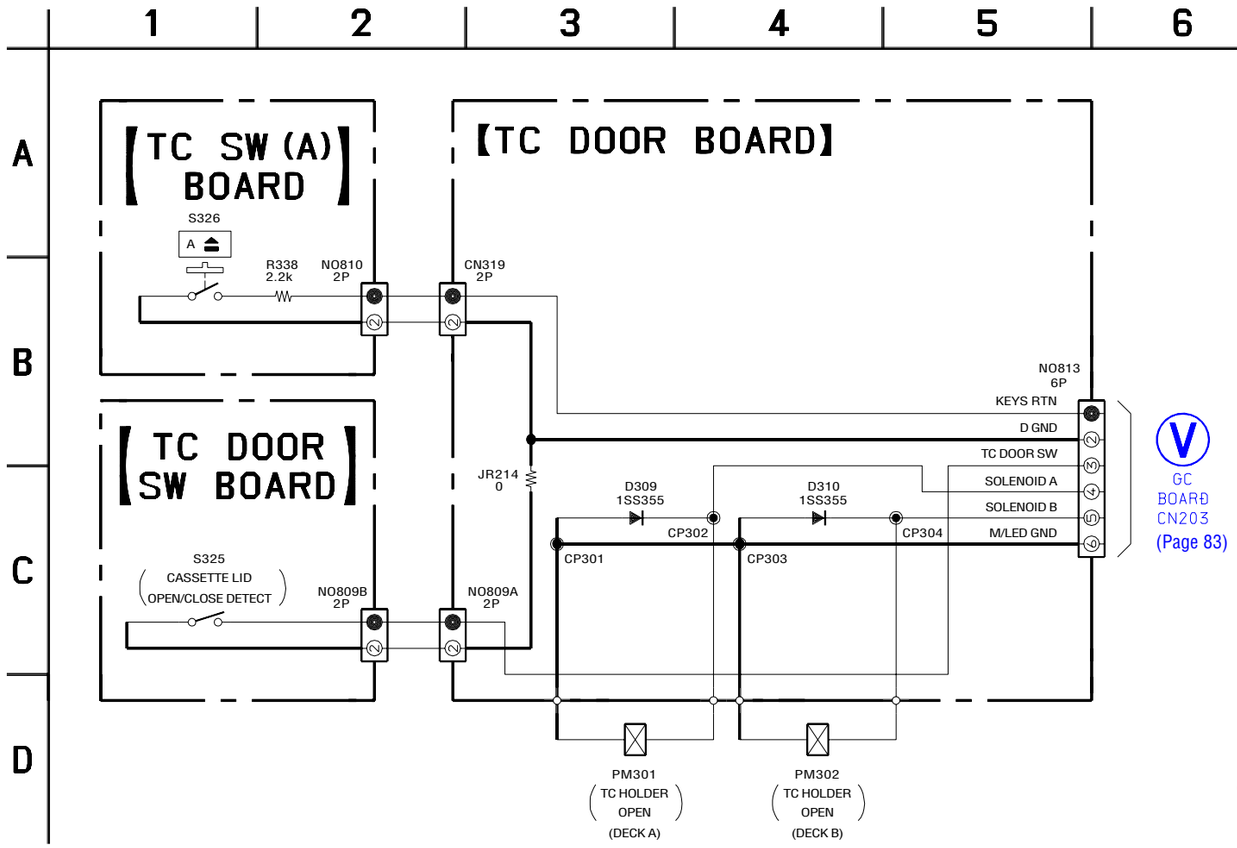
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

8-25. SCHEMATIC DIAGRAM – SW Board –



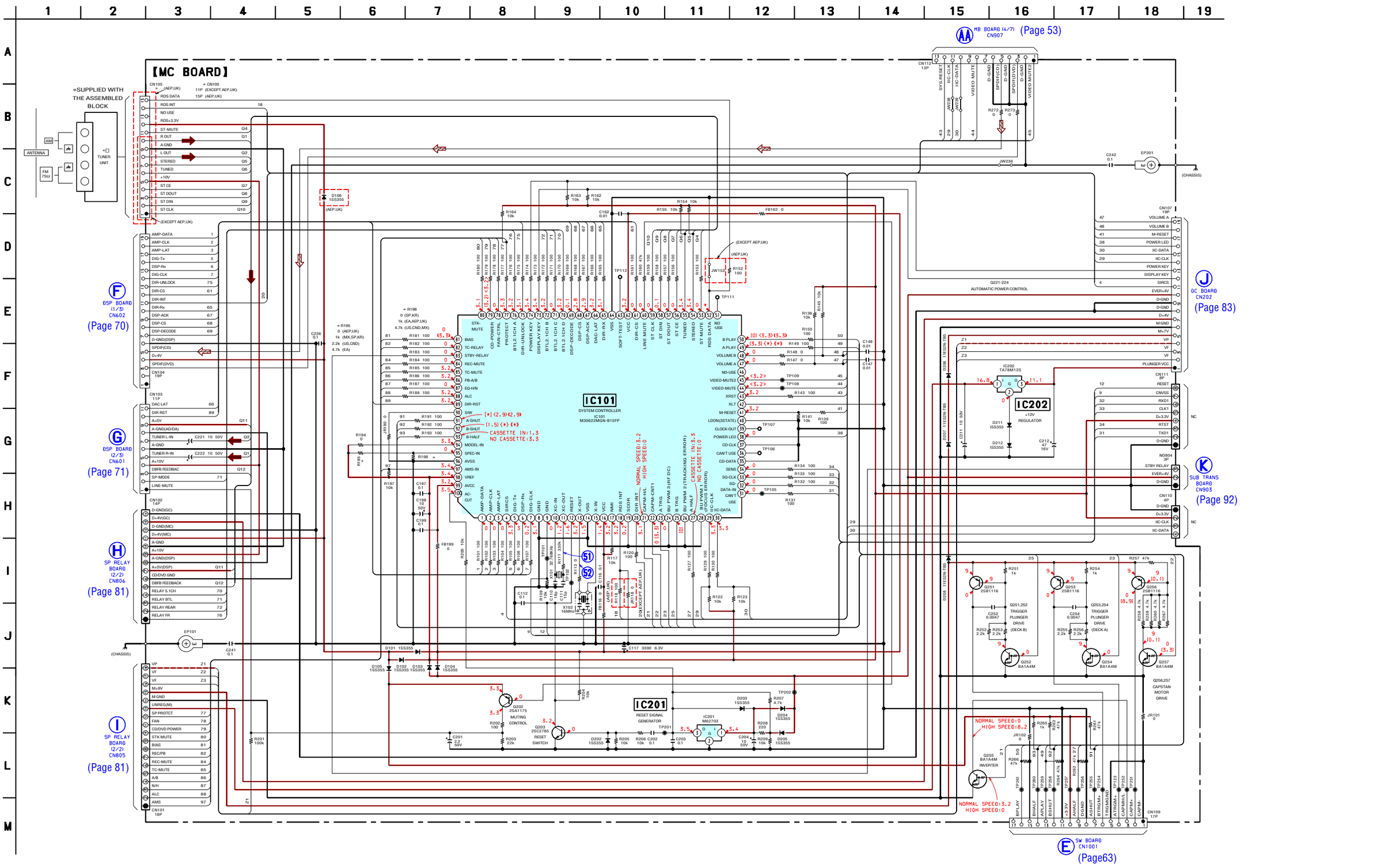
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

8-27. SCHEMATIC DIAGRAM – TC DOOR Section –



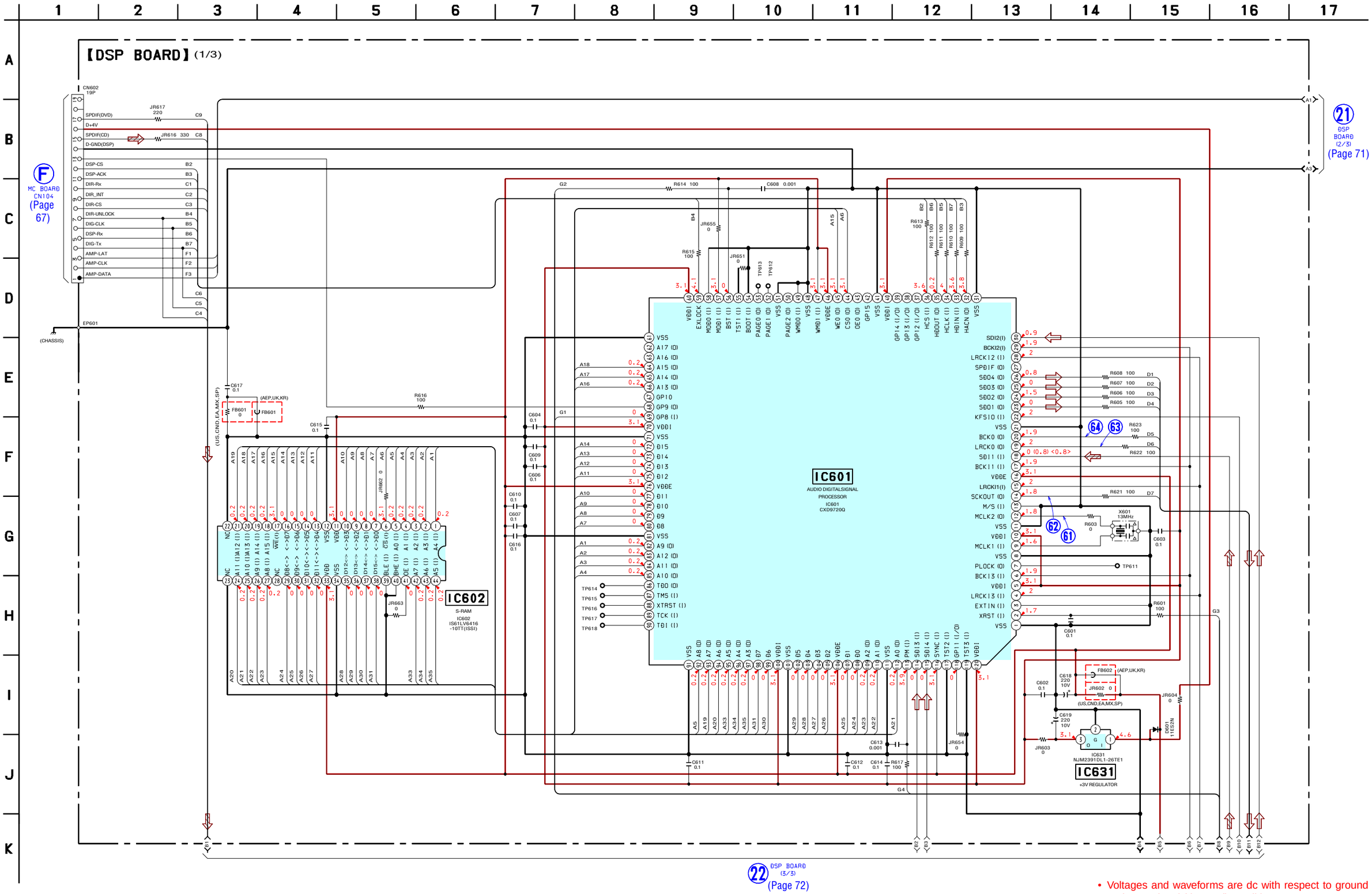
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

8-29. SCHEMATIC DIAGRAM – MC Board – • See page 93 for Waveforms.



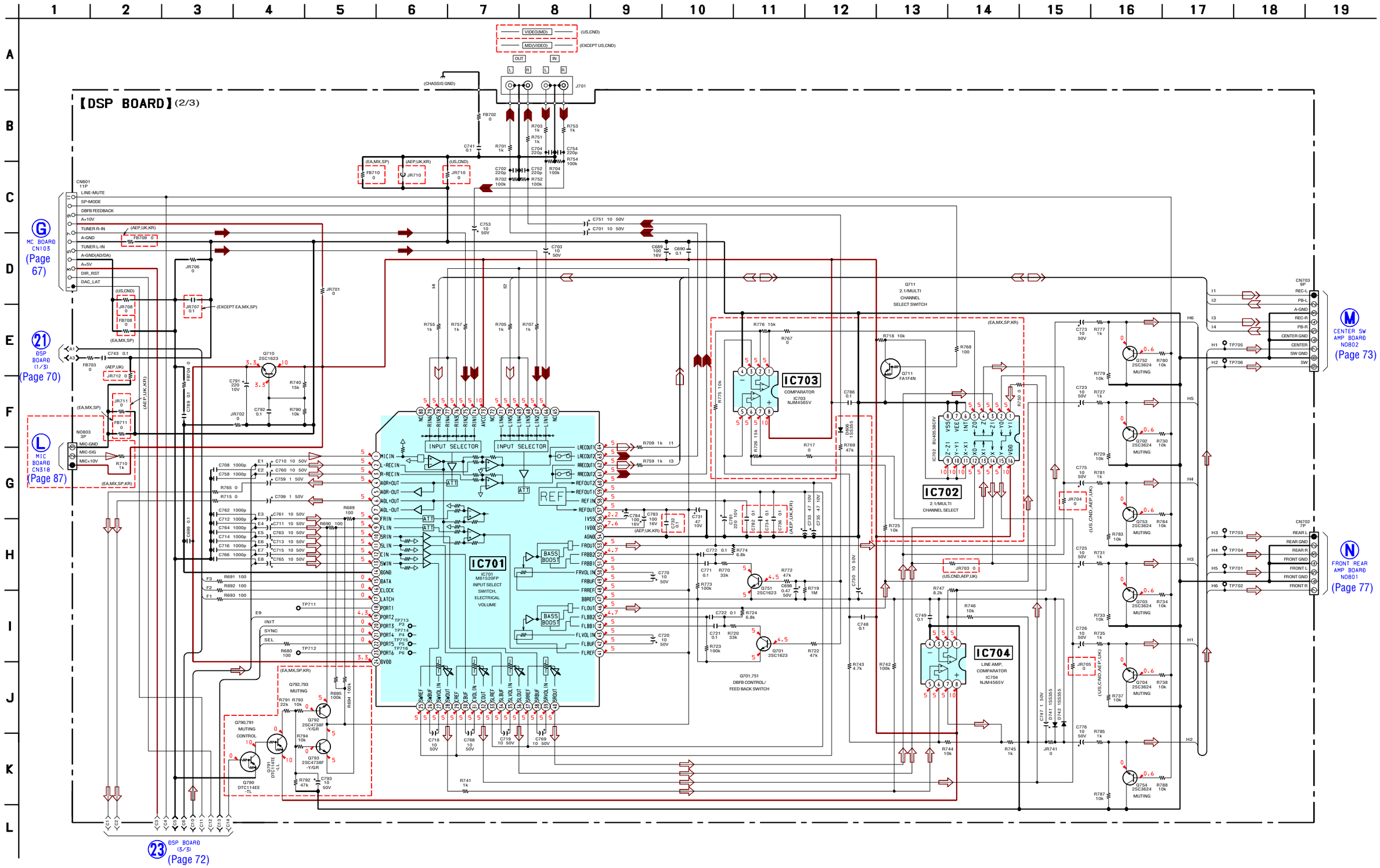
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER
  ( ) : CD PLAY
  < > : DVD PLAY
  [ ] : TAPE PLAY (DECK A)
  { } : TAPE PLAY (DECK B)
  〈〈 〉〉 : REC
  * : Impossible to measure

8-32. SCHEMATIC DIAGRAM – DSP Board (1/3) – • See page 93 for Waveforms.



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER
  ( ) : CD PLAY
  < > : DVD PLAY

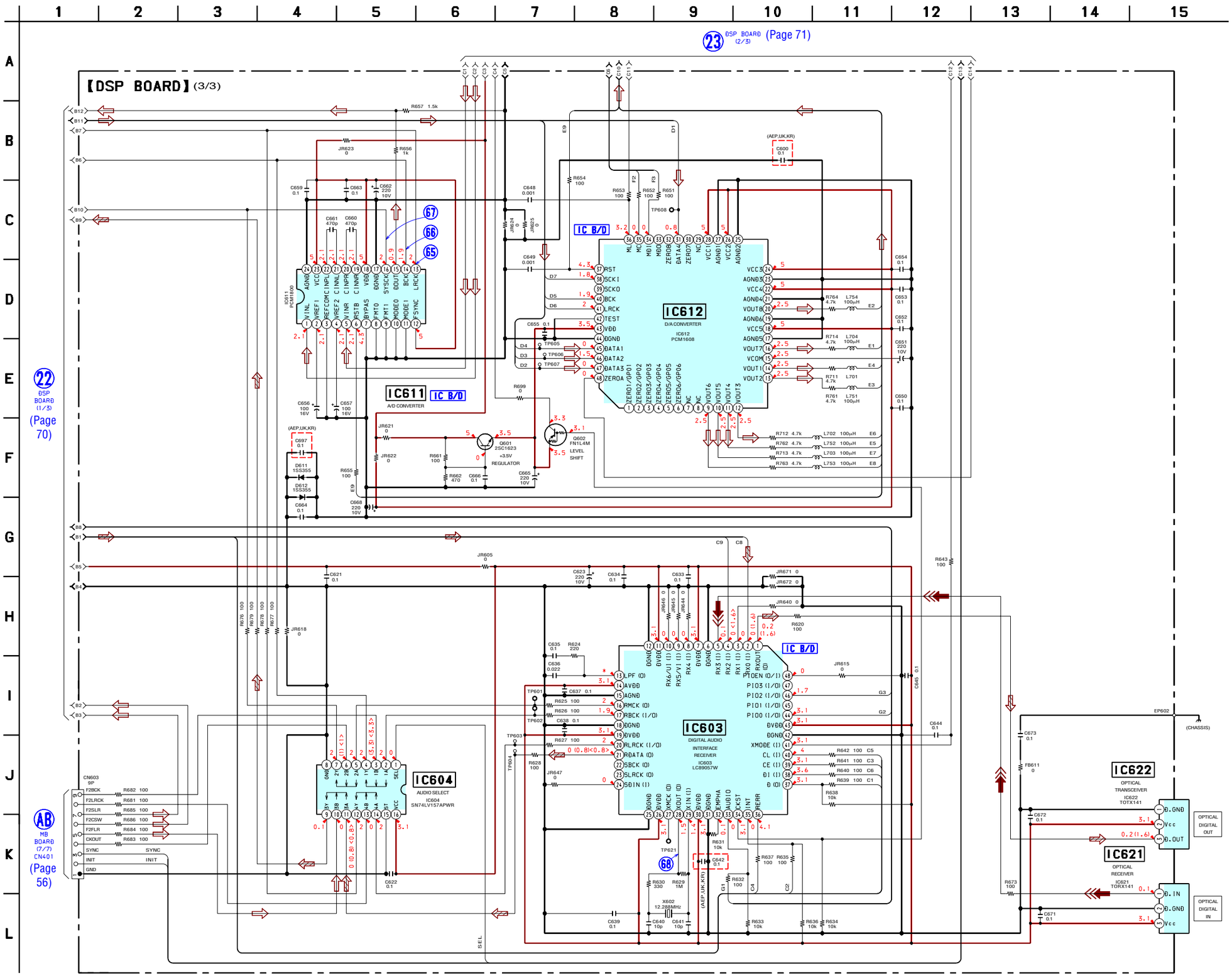
8-33. SCHEMATIC DIAGRAM – DSP Board (2/3) –



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

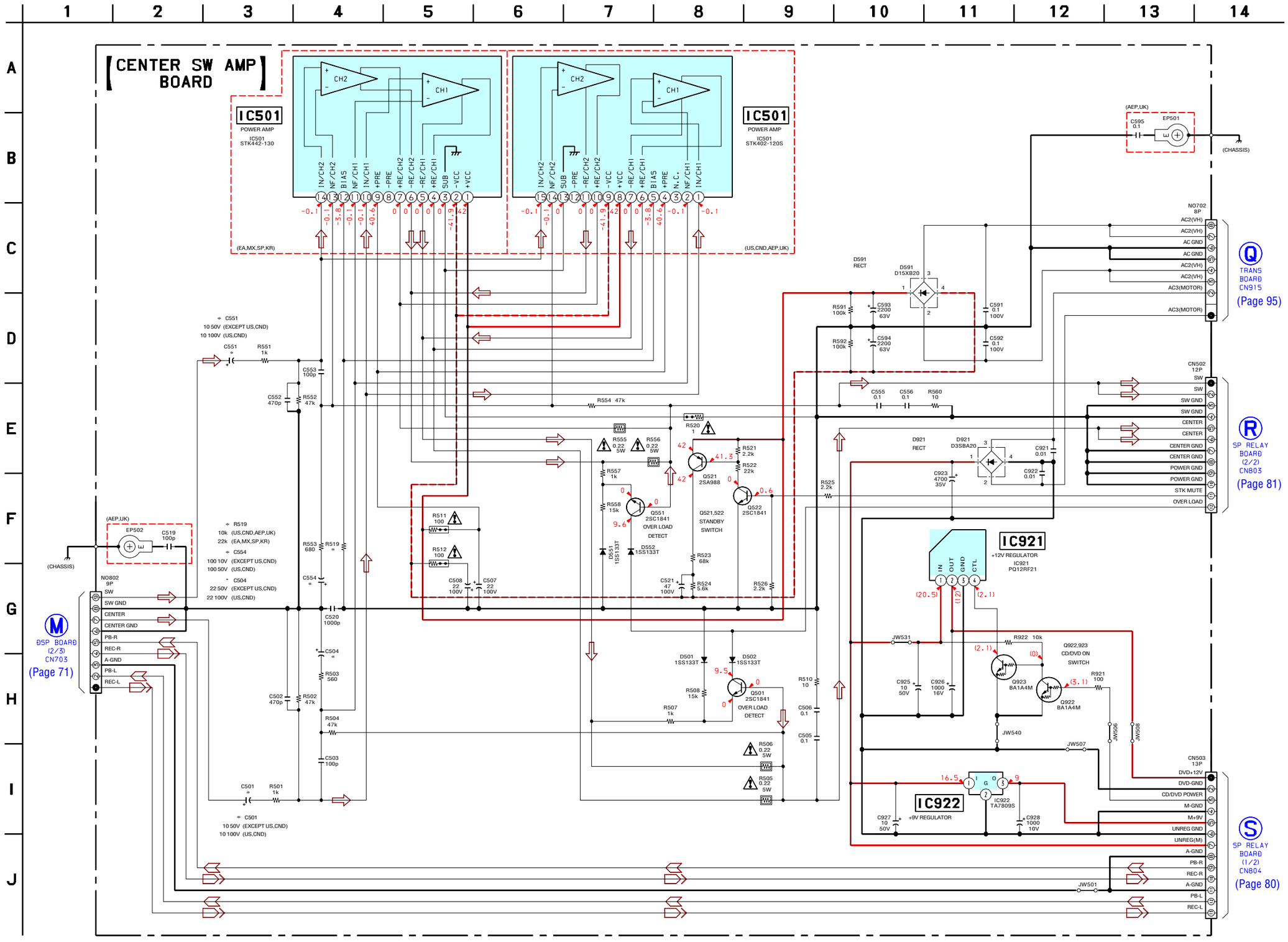
8-34. SCHEMATIC DIAGRAM – DSP Board (3/3) –

• See page 93 for Waveforms. • See page 96 for IC Block Diagrams.



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER
( ) : CD PLAY
< > : DVD PLAY
* : Impossible to measure

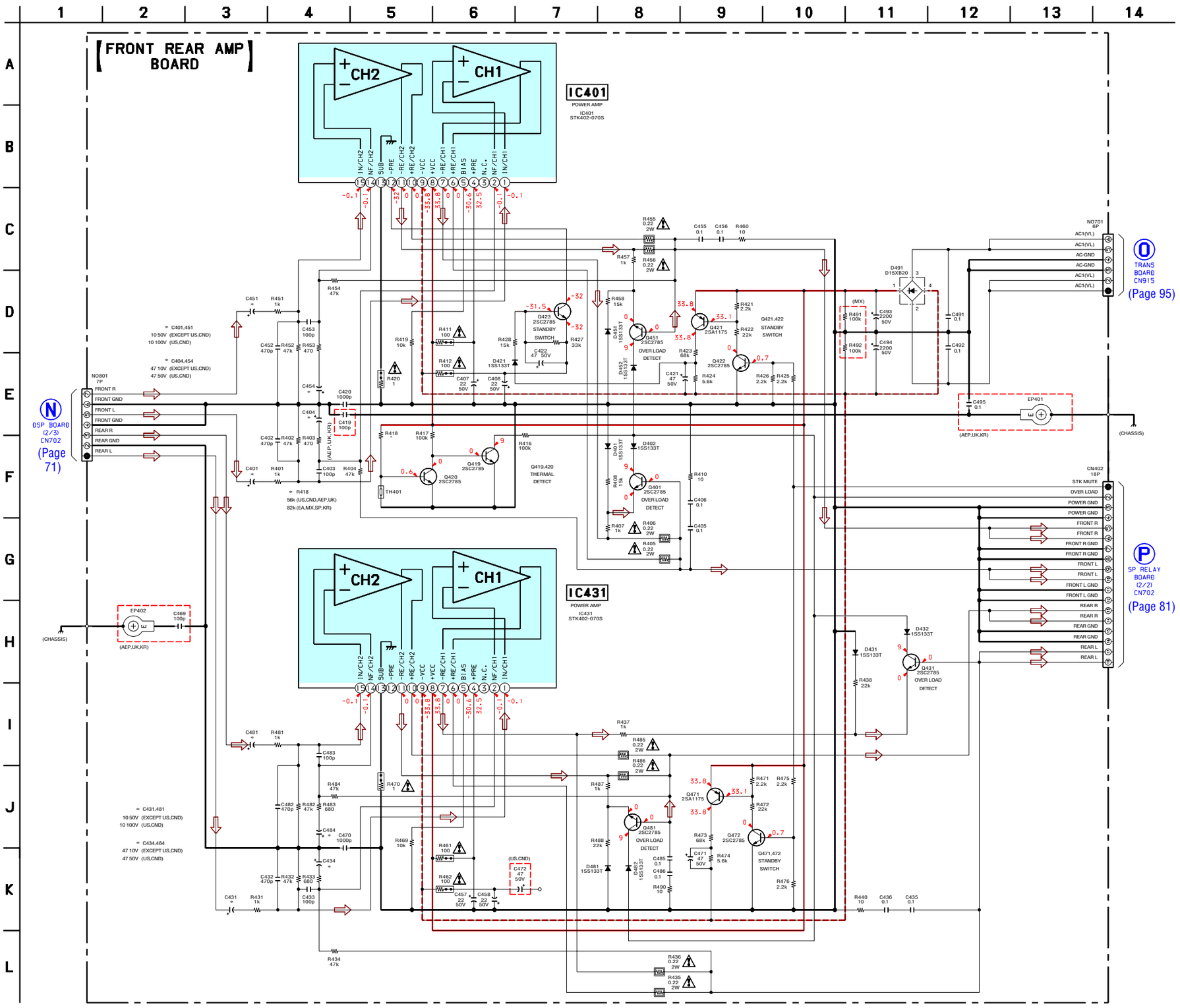
8-35. SCHEMATIC DIAGRAM – CENTER SW AMP Board –



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER
  ( ) : CD/DVD PLAY

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

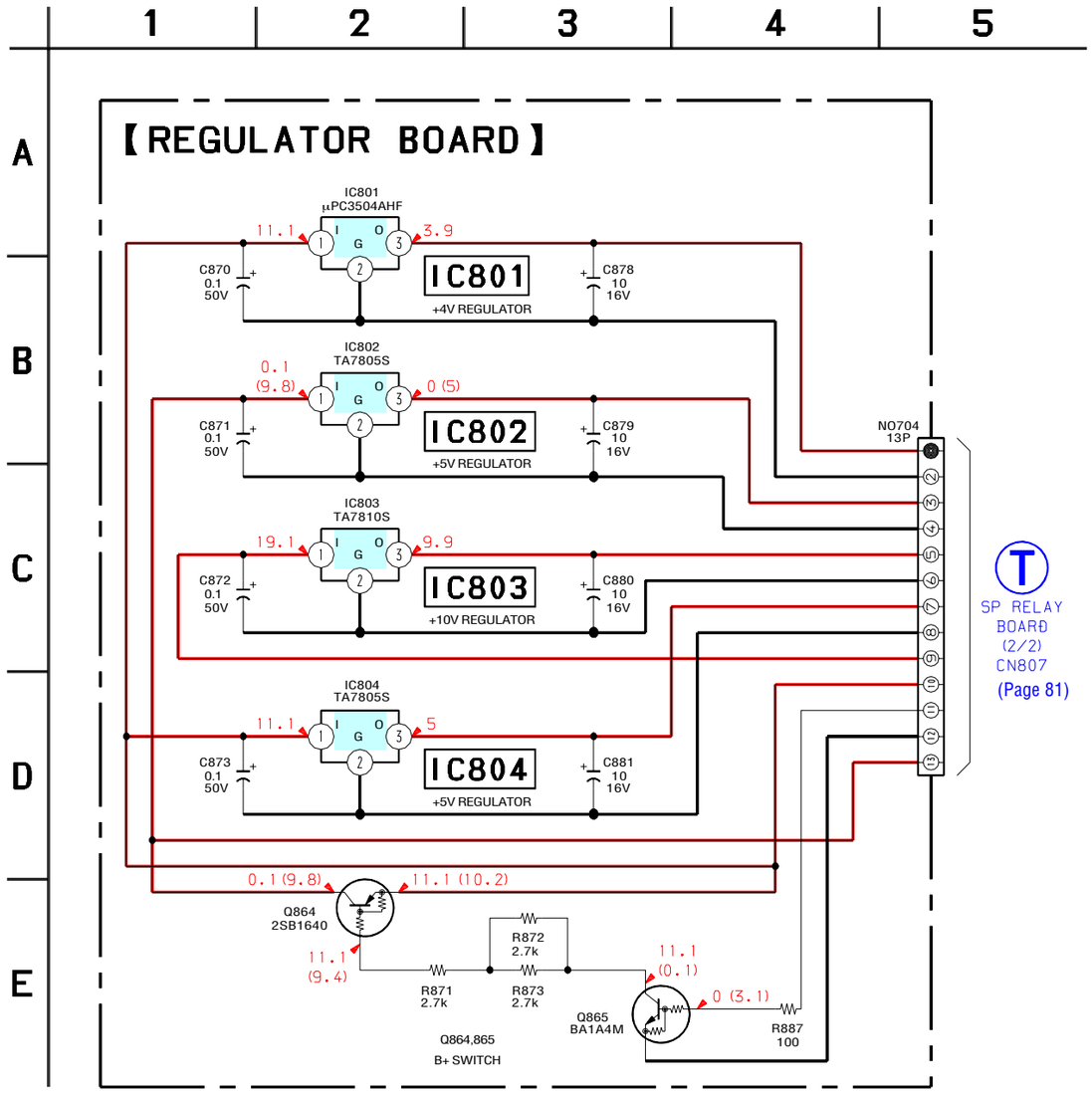
8-39. SCHEMATIC DIAGRAM – FRONT REAR AMP Board –



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

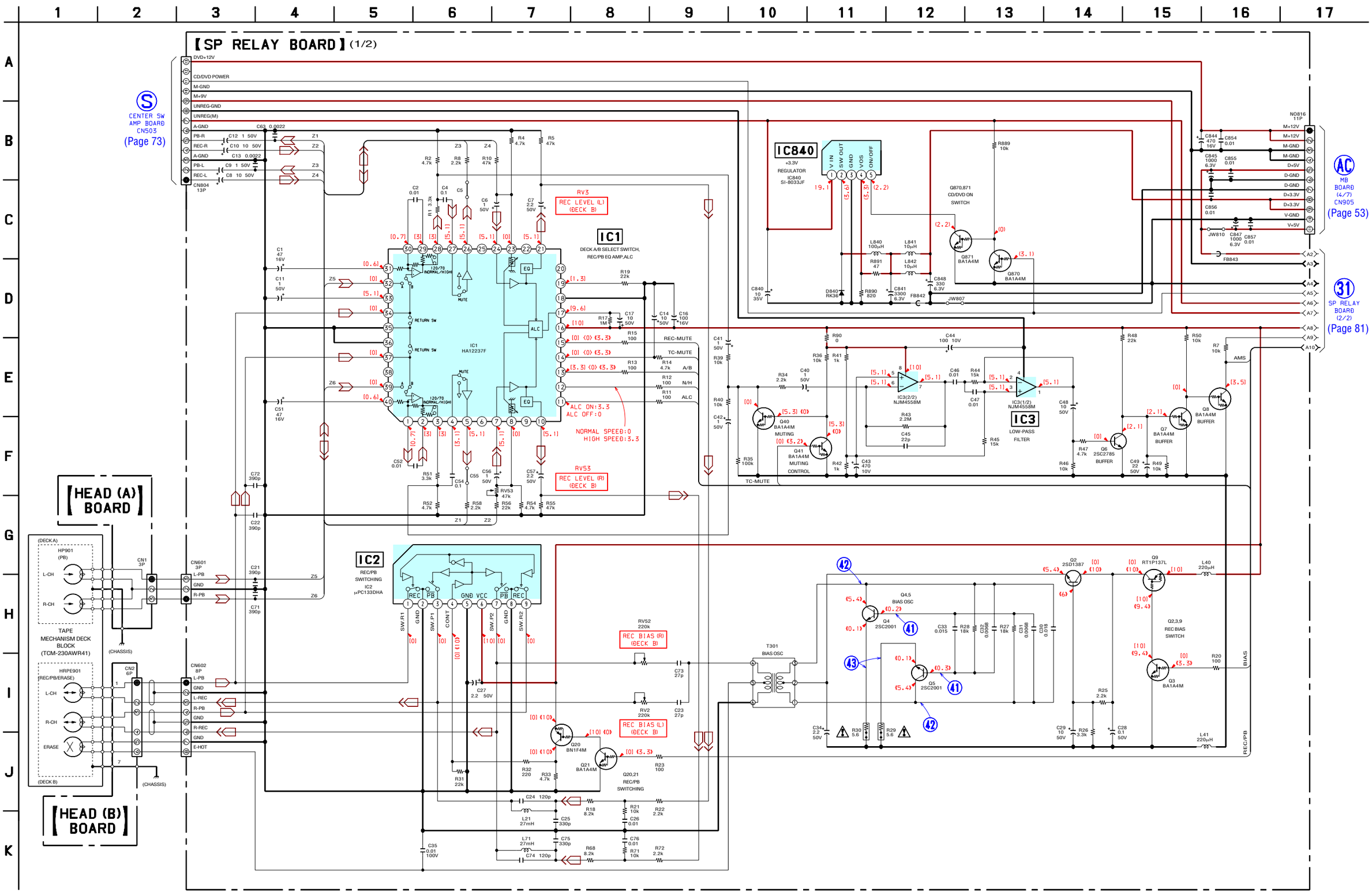
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-41. SCHEMATIC DIAGRAM – REGULATOR Board –



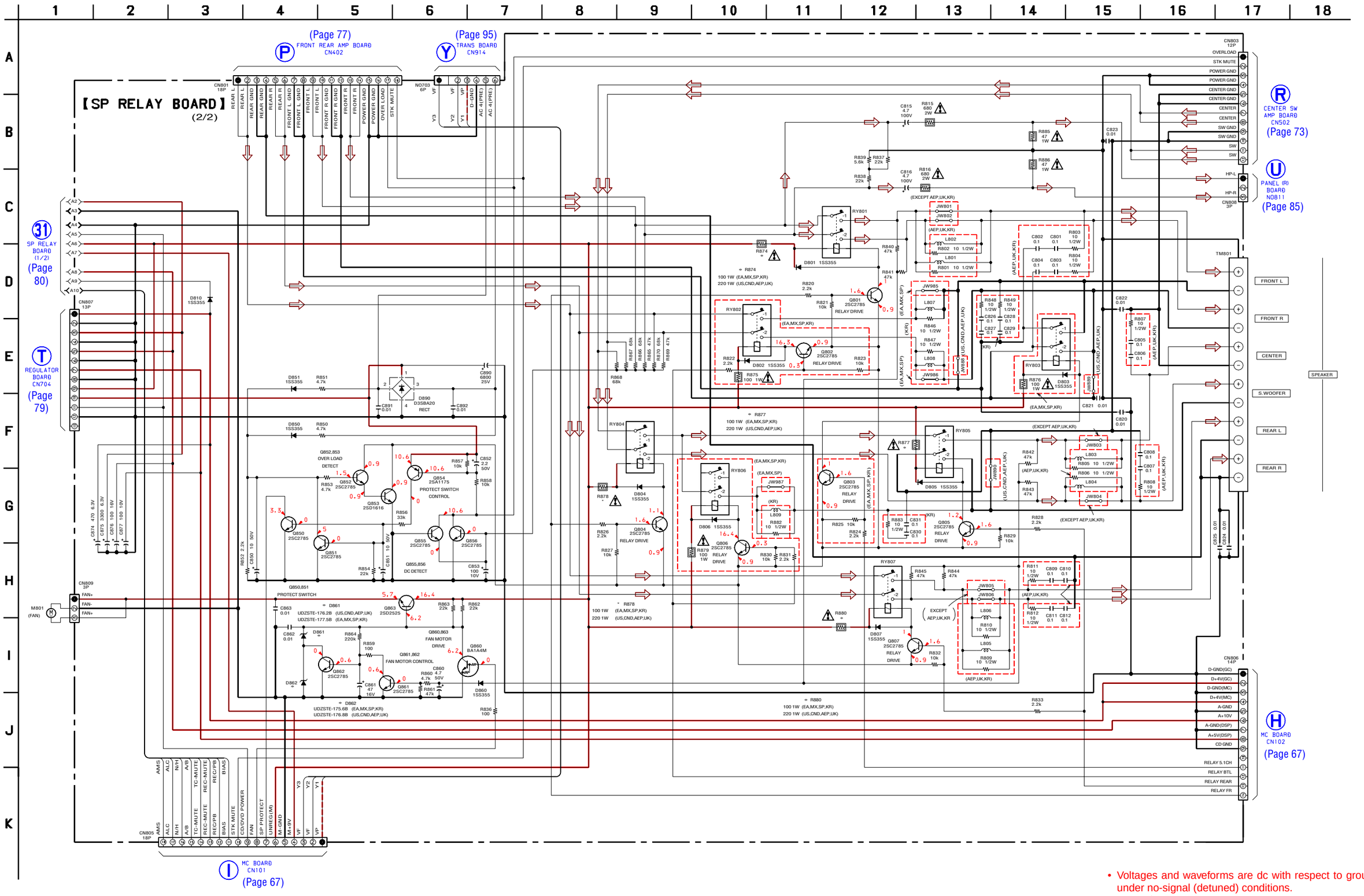
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER
  ( ) : CD/DVD PLAY

8-42. SCHEMATIC DIAGRAM – SPEAKER Section (1/2) – • See page 93 for Waveforms.



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER
  ( ) : CD/DVD PLAY
  ⟨⟨ ⟩⟩ : REC
  [ ] : TAPE PLAY (DECK A)
  { } : TAPE PLAY (DECK B)

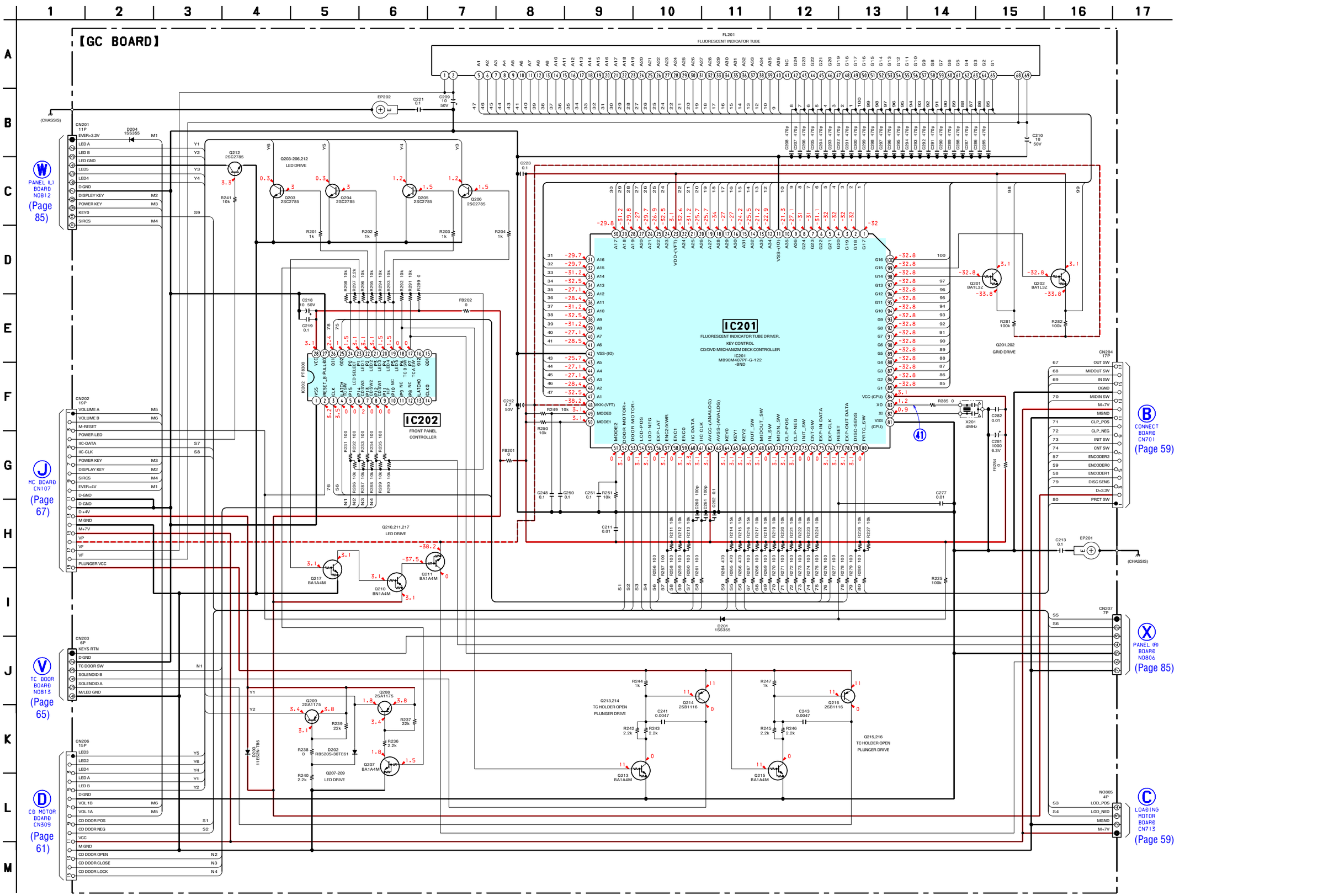
8-43. SCHEMATIC DIAGRAM – SPEAKER Section (2/2) –



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

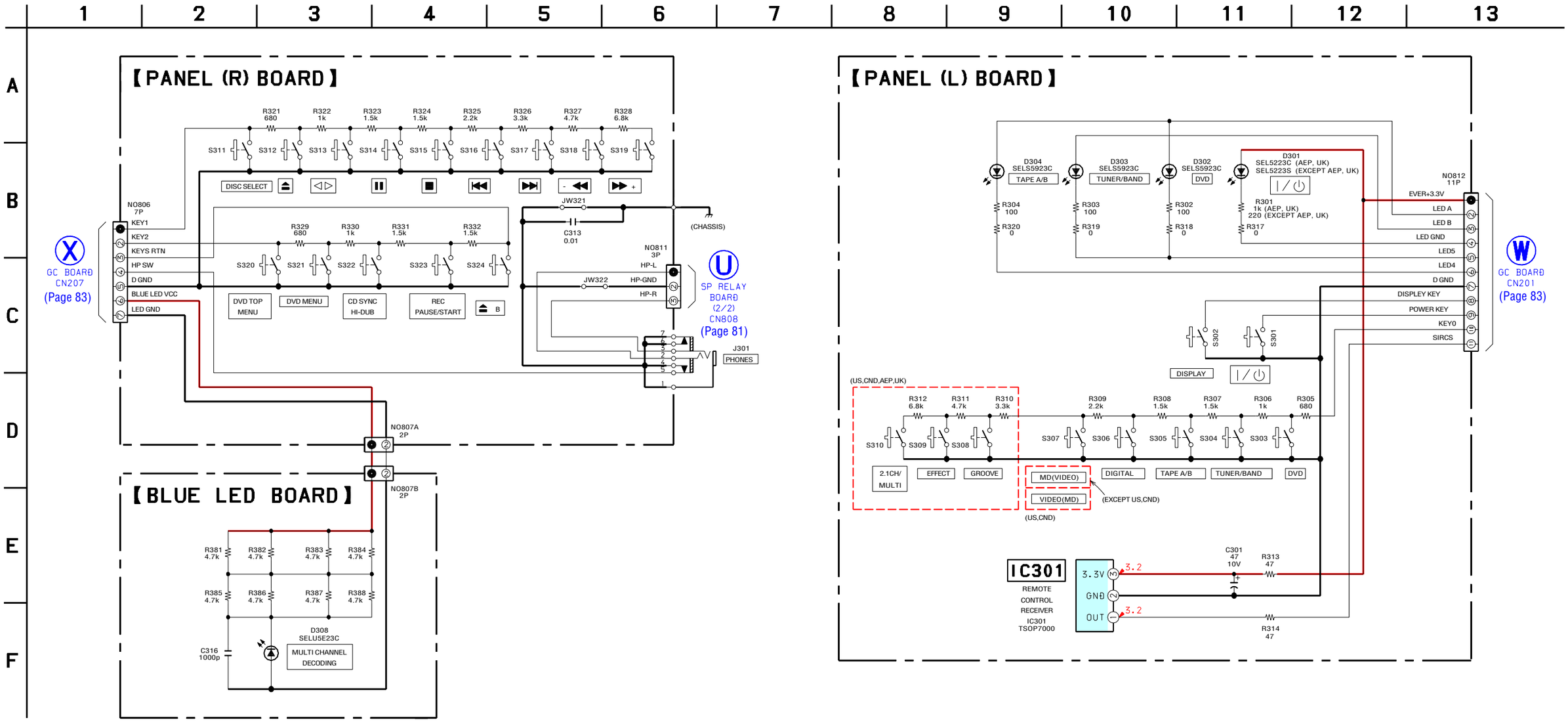
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-45. SCHEMATIC DIAGRAM – GC Board – • See page 93 for Waveform.



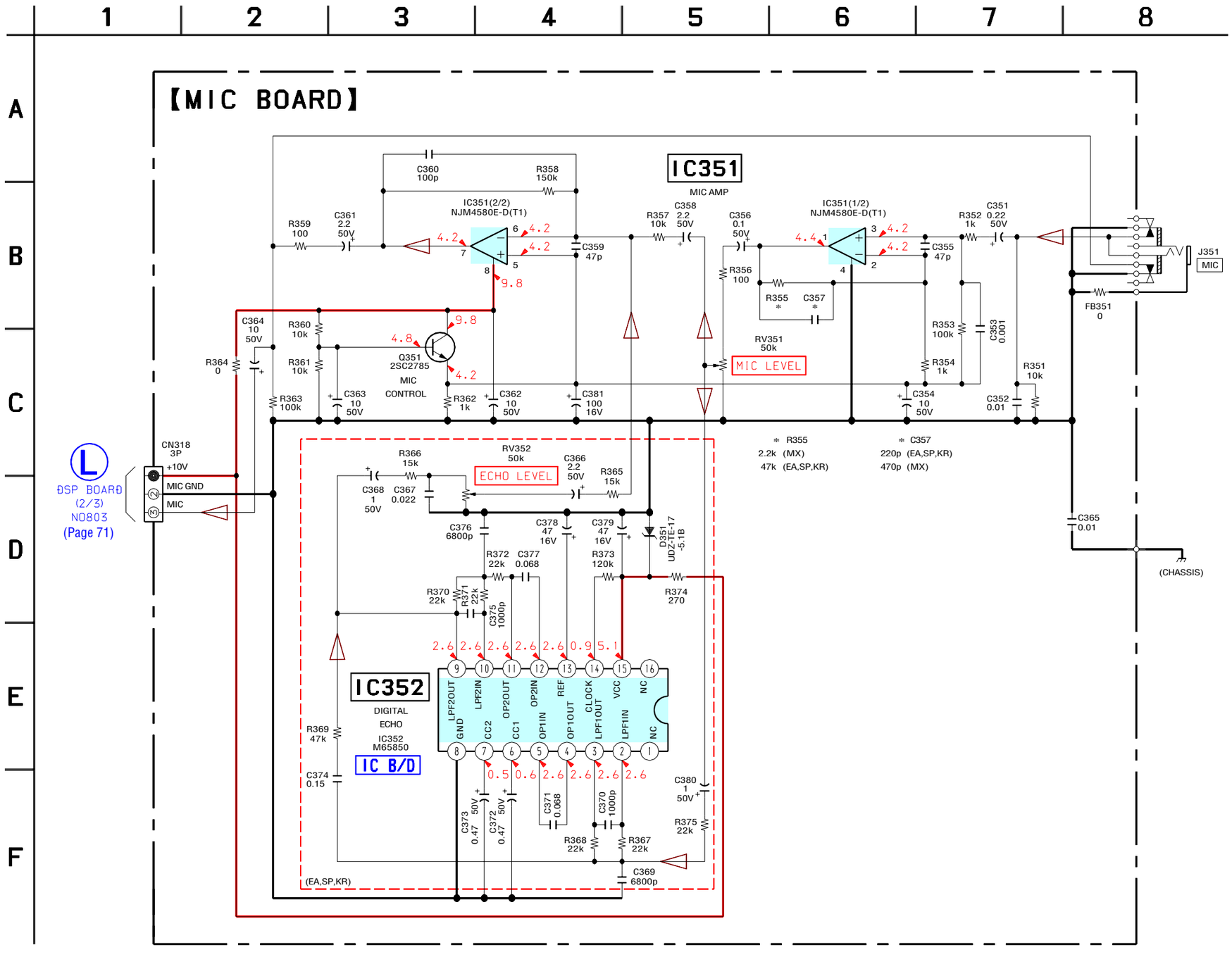
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

8-47. SCHEMATIC DIAGRAM – PANEL Section –



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

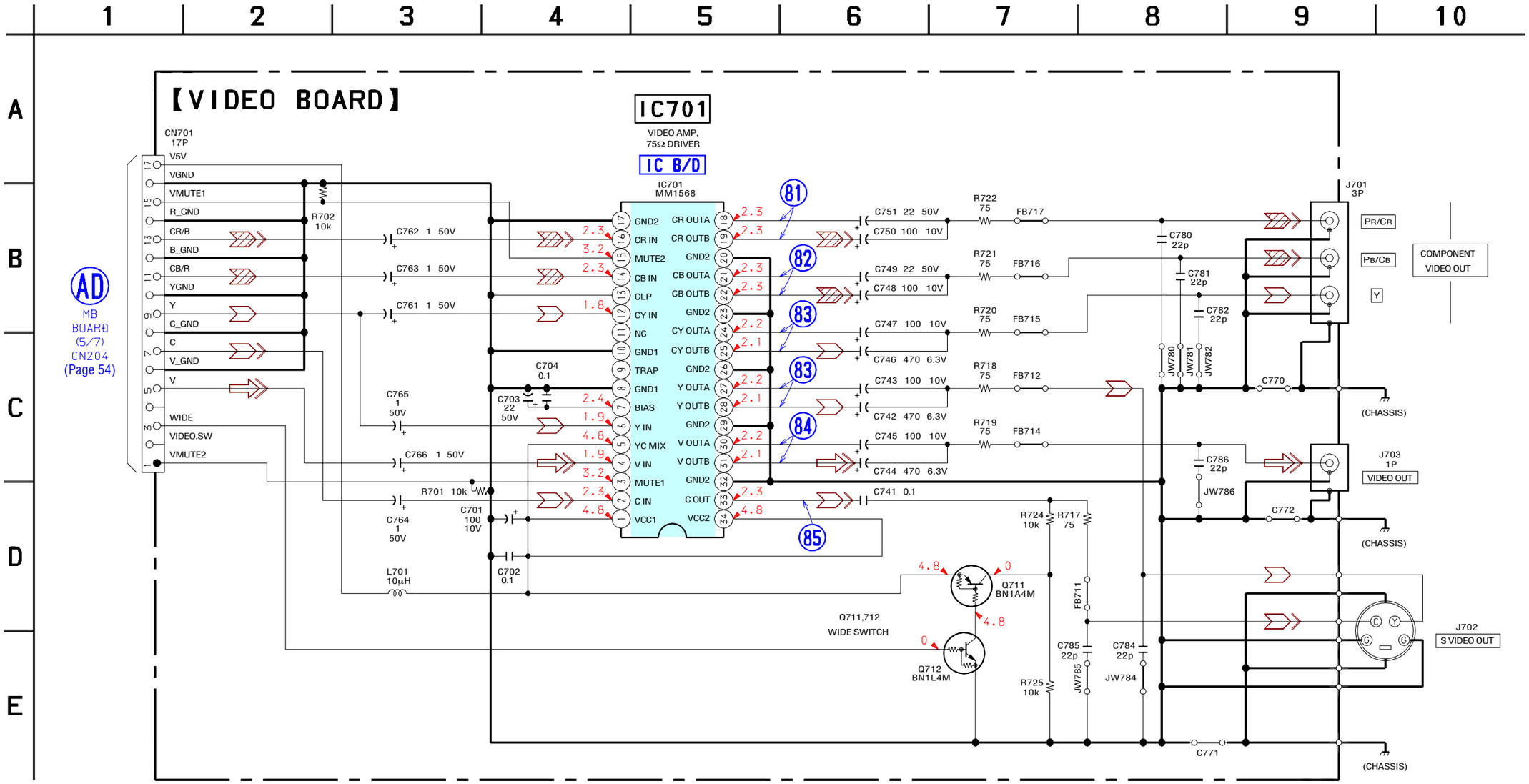
8-49. SCHEMATIC DIAGRAM – MIC Board – (EA, MX, SP, KR models) • See page 96 for IC Block Diagram.



• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : TUNER

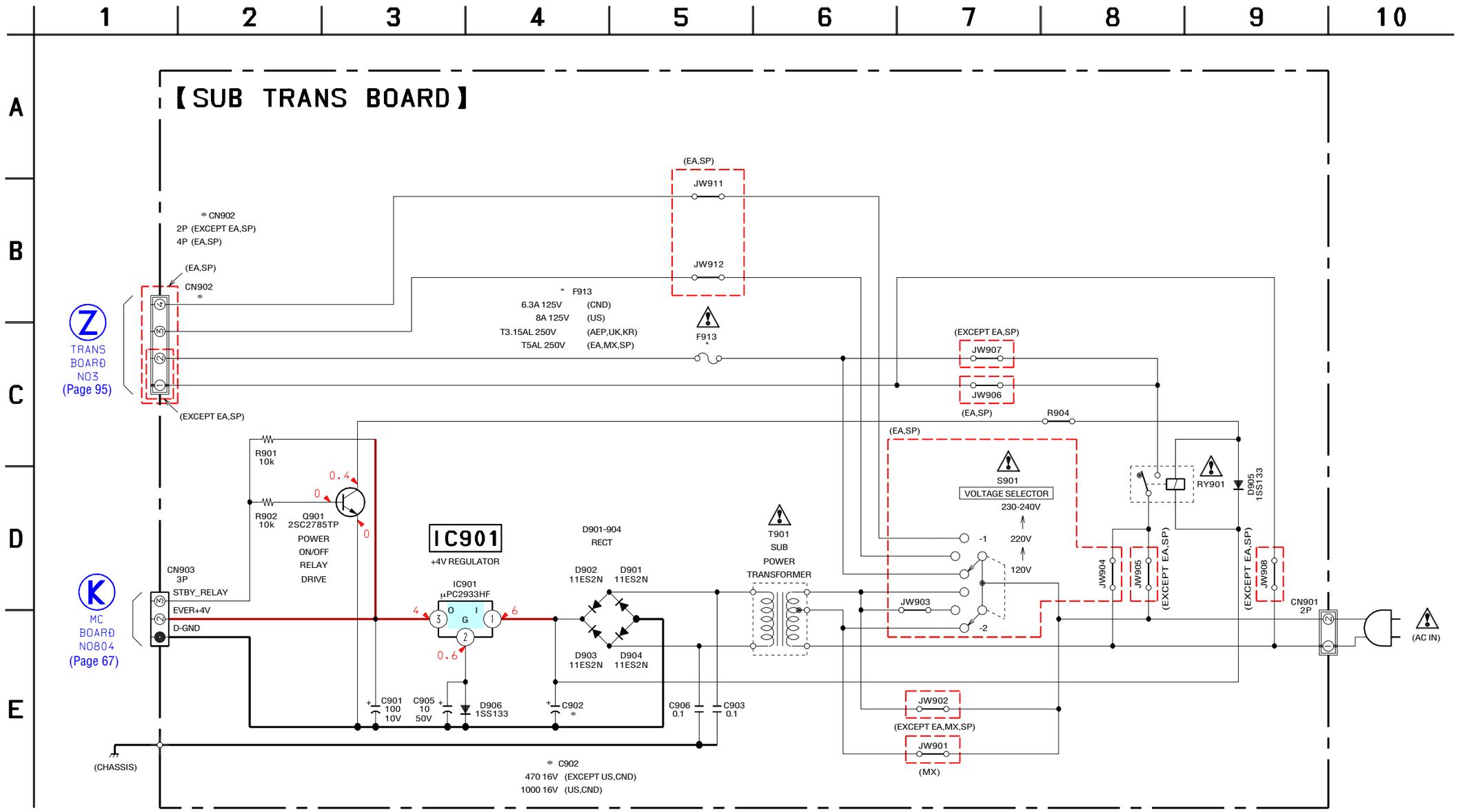
8-51. SCHEMATIC DIAGRAM – VIDEO Board –

• See page 93 for Waveforms. • See page 96 for IC Block Diagram.



• Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark : DVD PLAY

8-54. SCHEMATIC DIAGRAM – SUB TRANS Board –



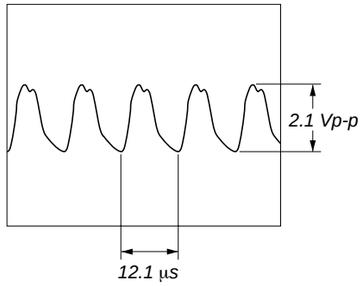
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

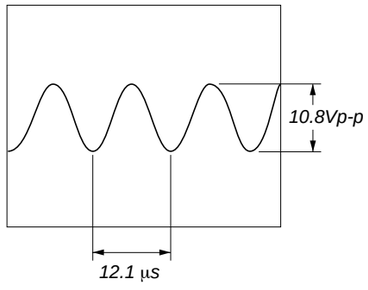
• Waveforms

– SP RELAY Board –

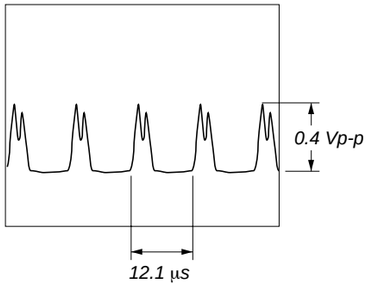
41 Q4, Q5 (Base) (REC Mode)



42 Q4, Q5 (Collector) (REC Mode)

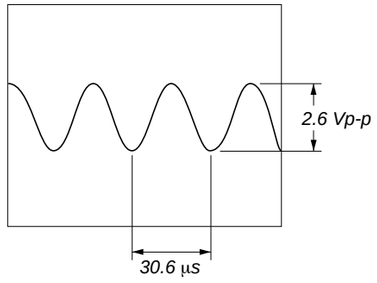


43 Q4, Q5 (Emitter) (REC Mode)

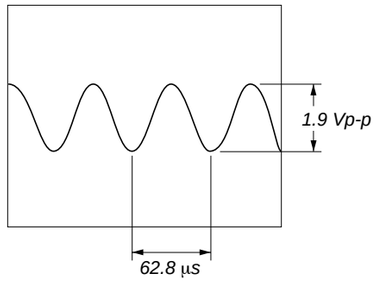


– MC Board –

51 IC101 ⑪ (XC-OUT)

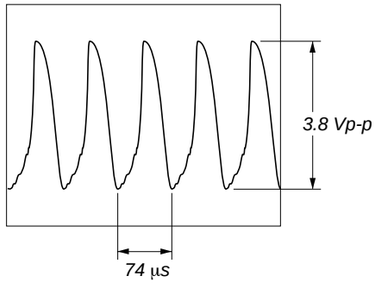


52 IC101 ⑬ (X-OUT)

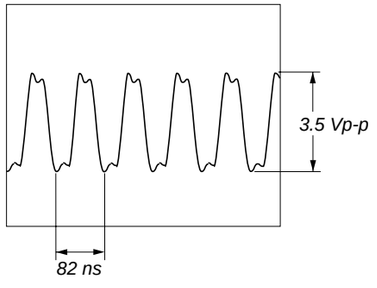


– DSP Board –

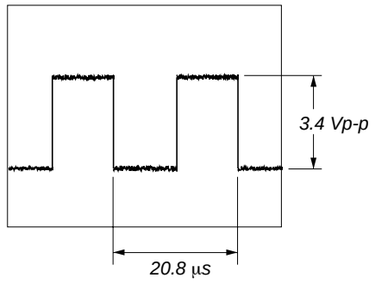
61 IC601 ⑫ (MCLK2)



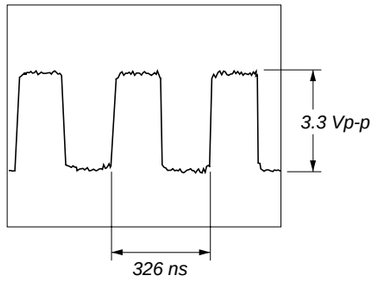
62 IC601 ⑭ (SCKOUT)



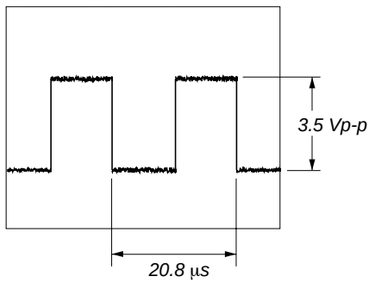
63 IC601 ⑳ (LRCK0)



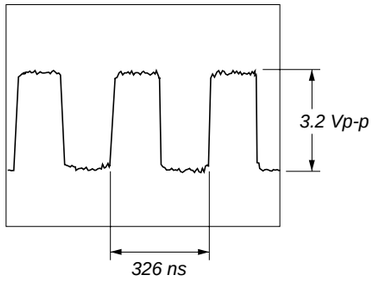
64 IC601 ⑳ (BCK0)



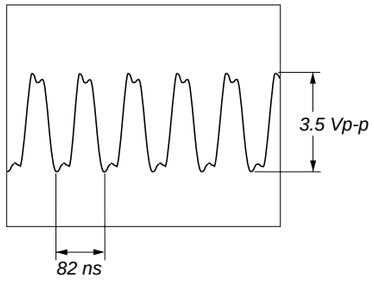
65 IC611 ⑬ (LRCK)



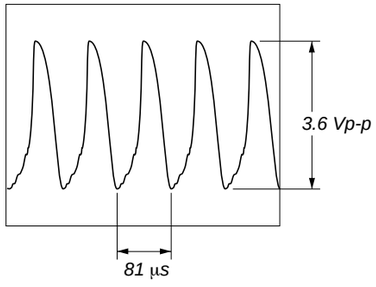
66 IC611 ⑭ (BCK)



67 IC611 ⑯ (SYSCK)

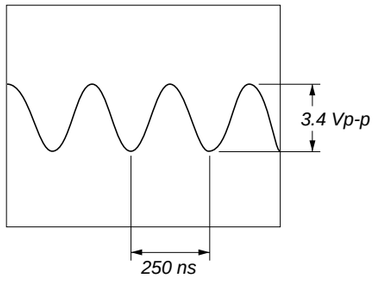


68 IC603 ㉘ (XOUT)



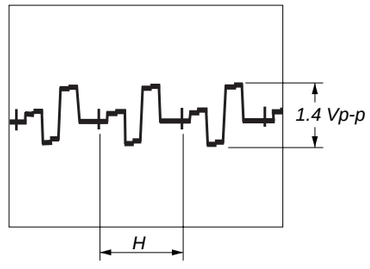
– GC Board –

71 IC201 ㉝ (XO)

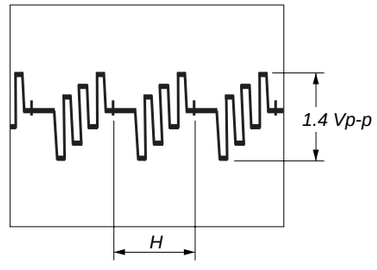


– VIDEO Board –

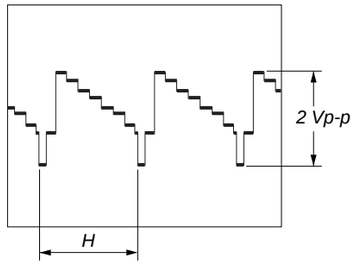
81 IC701 ⑱, ⑲ (CR OUT)
(NTSC Color Bars Play)



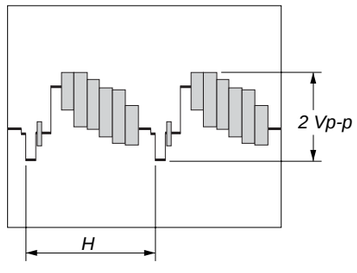
82 IC701 ㉑, ㉒ (CB OUT)
(NTSC Color Bars Play)



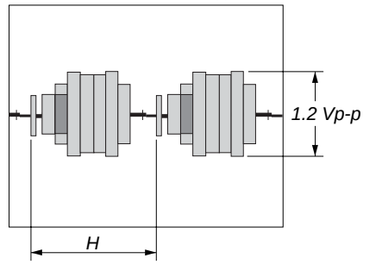
83 IC701 ㉔, ㉕ (CY OUT), ㉗, ㉘ (Y OUT)
(NTSC Color Bars Play)



84 IC701 ㉚, ㉛ (V OUT)
(NTSC Color Bars Play)

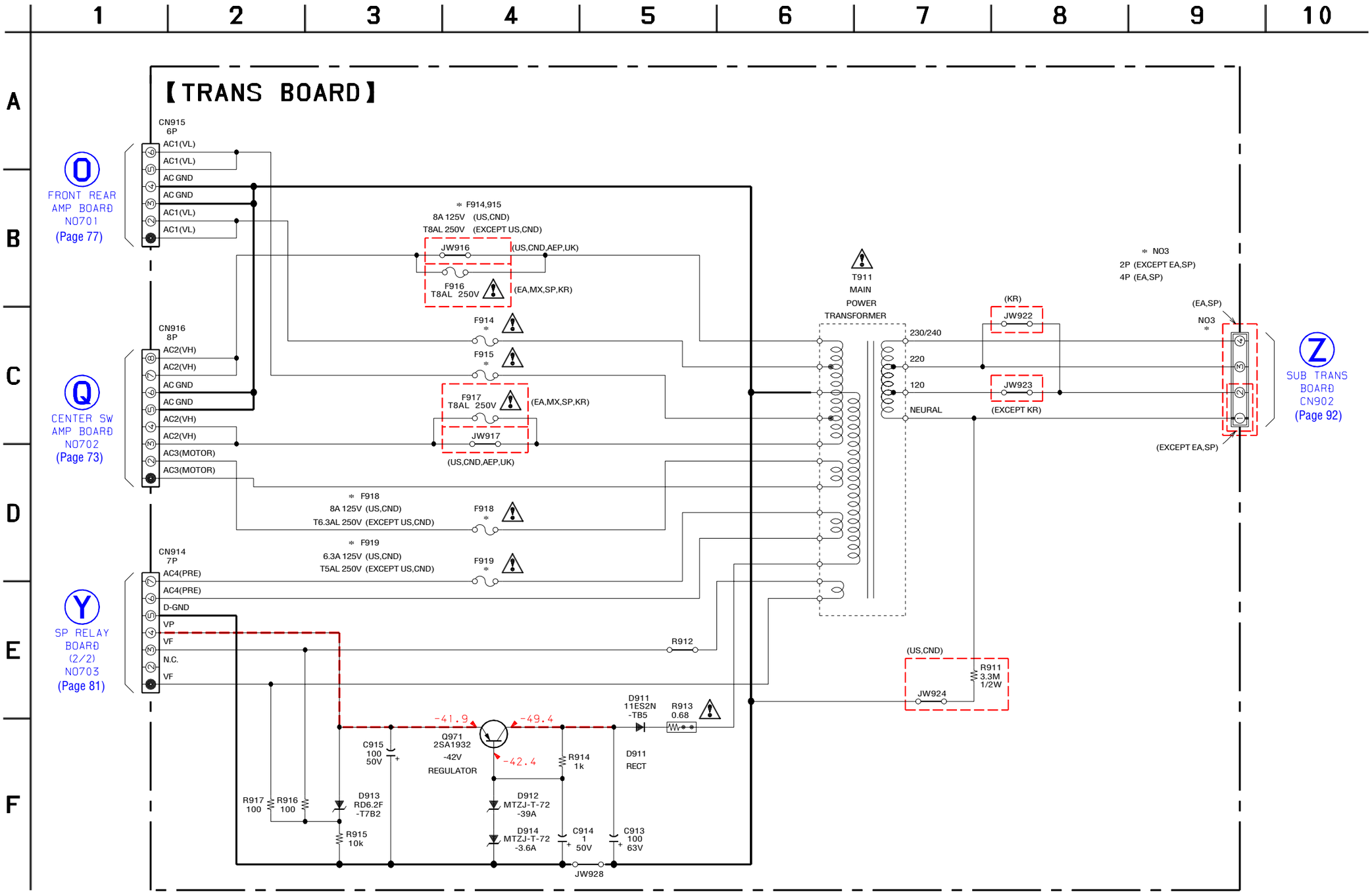


85 IC701 ㉝(C OUT)
(NTSC Color Bars Play)



93

8-56. SCHEMATIC DIAGRAM – TRANS Board –



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.